SLO-1700

SERVICE MANUAL

September, 1984

711A CHASSIS

SPECIFICATIONS

System

Video recording system	Rotary two-head helical scanning
Audio recording system	Beta hi-fi PAL system (2 channels)
Video signal	CCIR standards, PAL colour (recording on the conventional longitudinal audio track is stereo.)

Video

Input	VIDEO IN: BNC connector 1 Vp-p, 75 ohms, unbalanced, negative sync
Output	VIDEO OUT: BNC connector 1 Vp-p, 75 ohms, unbalanced, negative sync
Horizontal resolution	260 lines
Signal-to-noise ratio	Colour: Better than 40 dB B/W: Better than 43 dB

Audio

Input (audio input/AFM input, adjustable on RP-18)	AUDIO IN: phono jacks 0 dBs, –5 dBs, –10 dBs selectable
Output (audio output/AFM output, adjustable on RP-18)	AUDIO OUT: phono jacks 0 dBs to –10 dBs, variable PHONES: stereo phone jack 8 ohms, unload Better than –26 dBs (at maximum volume)

Beta hi-fi PAL sound

Frequency response	20 Hz to 20,000 Hz (MPX filter off)
Wow and flutter	Less than 0.005% WRMS
Dynamic range	More than 80 dBs

Tape transport

Tape speed	18.73 mm/sec.
Maximum recording time	2 hours 10 min. with Sony L-500 cassette
Fast forward/rewind time	Within 3 min. 30 sec. with L-500

QC terminals

Video RF output terminal (for playback)	Special test pin (x1) BNC (x1)
Beta hi-fi RF output terminal (for playback)	Special test pin (x1) BNC (x1)
RF switching pulse terminal (for playback)	Special test pin (x1) BNC (x1)
Ground terminal	Special test pin (x1)

Remote control inputs/output

DIN 6-pin connector	+12 V OUT, EJECT, GND, INHIBIT, $\overline{\text{IR}}$, REC ANSWER BACK

Beta

VIDEO CASSETTE RECORDER

SONY®

MICROFILM

Consumer VIDEO

Others

High-speed FF/REW	FF/REW at unthreading
Tape beginning/end indicator	At the top/end from 1/6 of the tape length, the indicator lights up and off
Beta hi-fi playback indicator	
Cassette in-use indicator	

General

Power requirements	110 V–240 V ac, 50/60 Hz
Power consumption	40 watts
Operating temperature	10°C to 30°C
Storage temperature	−20°C to +65°C
Dimensions	Approx. 430 × 118.5 × 389.5 mm (w/h/d) (17 × 4¾ × 15½ inches) including projecting parts and controls
Weight	Approx. 11 kg (24 lb 6 oz)
Accessory supplied	Level control cover (1)

Whilst the information given is true at the time of printing, small production changes in course of our company's policy of improvement through research and design might not necessarily be indicated in the specifications. We would ask you to check with your appointed Sony dealer if clarification on any point is required.

Note

Appliance conforms with EEC Directive 76/889 regarding interference suppression.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

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SECTION 1
GENERAL

1-1. WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

For the Customers in the United Kingdom

The mains lead plug of this apparatus is a 2-pin type designed to be connected only to other apparatus equipped with a suitable socket outlet. If the plug cannot be used in this way, cut off the plug and fit an appropriate one as follows.

IMPORTANT
The wires in the mains lead adaptor are coloured in accordance with the following code:
Blue: Neutral
Brown: Live
As the colours of the wires in the mains lead adaptor of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked the letter L or coloured red.

WARNING
To prevent shock hazard, do not insert the plug cut off from the mains lead into a socket outlet. This plug cannot be used and should be discarded.

1-2. FEATURES

For better sound and operation

Beta hi-fi recording and playback system.
BETA HI-FI input/output and AUDIO input/output.
Manual recording level adjustment.
Level of line input/output selectable.
Audio limiter for conventional longitudinal audio track.
Noise reduction system (BNR) for longitudinal audio track.
Full-function remote control connectors.
Recording remote control connector.
Mode lock switch.
High-speed fast forward and rewind.

Other features

Test point terminals.
Head hours meter.
Large level meters.
"Pop-up" cassette compartment.
Headphone level adjustable.

1-3. PRECAUTIONS

On safety
- This unit operates on 110 V–240 V ac, 50/60 Hz.
- Should any solid object or liquid fall into the cabinet, turn off the unit and have it checked by qualified personnel before operating it any further.
- To disconnect the mains lead (ac power cord), pull it out by the plug. Never pull the lead itself.

On installation
- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation grille.
- Do not install the unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- The unit is designed for operation in a horizontal position. Do not install it in an inclined position.
- Keep the unit and cassette tapes away from euqipment with strong magnets, such as large loudspeakers, an amplifier, etc.

On operation
- When the unit is not to be used for a long period, turn off the POWER switch on the rear to conserve energy and to extend the useful life of your unit.
- Remove and store video cassettes after recording or playback.

On using as a printer
For optimum results, use a video cassette with a model number L-625 or less.

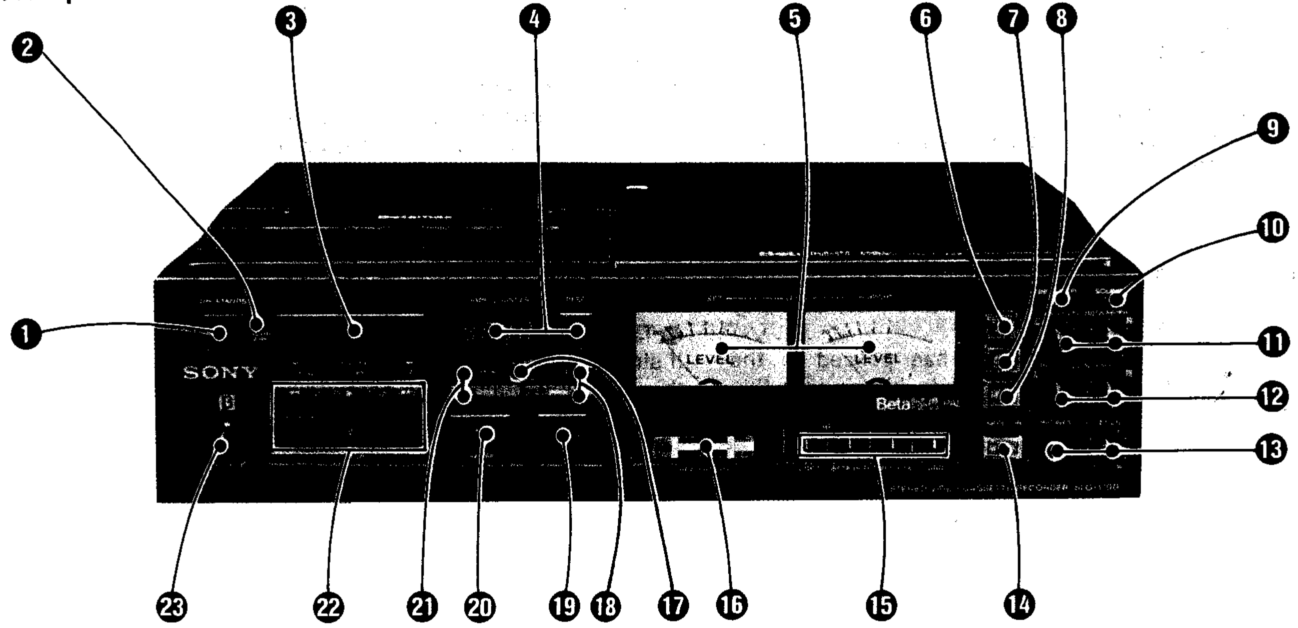
On cleaning
Clean the cabinet, panel and controls with a dry soft cloth. Do not use a moistened cloth or any type of solvent, such as alcohol or benzine, which might damage the finish.

On repacking
Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

On colour broadcasting systems
This machine is designed to record and playback using the PAL colour standard. Recording and playback of video sources based on other colour systems cannot be guaranteed.

1-4. LOCATION AND FUNCTION OF CONTROLS

Front panel



❶ ON/STANDBY switch and indicator
Press to turn on the recorder. The green indicator will light up. Press again to switch the recorder to standby.

❷ CASSETTE INSIDE indicator
Lights up when a cassette is inserted.

❸ ⏏ EJECT button
Press to remove or insert the cassette. This button does not function when the recorder is turned off.

❹ TAPE COUNTER and RESET button
The TAPE COUNTER provides a numerical reference point. To reset the counter to zero, press the RESET button.

❺ LEVEL meters
Show the recording and playback level according to the setting of the B HI-FI MONITOR switch.
When the B HI-FI MINITOR switch is set to ON (indicator lights up), these meters show the Beta hi-fi recording/playback level. When the switch is set to OFF (indicator does not light up), they show the recording/playback level of the conventional longitudinal audio track.

❻ Beta hi-fi lamp (green)
Recording is always made with the Beta hi-fi system and this lamp lights up.
In playback mode the Beta hi-fi lamp lights up only, when the recording was made on a Beta hi-fi system.

❼ BNR (Beta Noise Reduction) switch
Press this switch (lamp lights up) to activate the Beta Noise Reduction circuit. Note that it is not possible to change the setting of this switch once the ● REC button is pressed.
The Beta Noise Reduction system is only applied to the conventional longitudinal audio track.

❽ LMTR (limiter) switch
Pressing this switch (lamp lights up) limits the audio level for the conventional longitudinal audio track, so that even signal sources with wide dynamic range, like the 1″ VTR, PCM audio processor, can be recorded without distortion.

❾ BETA HI-FI indicator (yellow)
Lights up when the internal normal/Beta hi-fi switch on the RP-18 board is set to AFM.

❿ SOUND indicator (yellow)
Lights up when the sound only on/off switch of the remote control unit is set to ON.

⓫ REC LEVEL controls for BETA HI-FI recording
For adjusting the recording level on the Beta hi-fi track.

⓬ REC LEVEL controls for NORMAL recording
For adjusting the recording level of the conventional longitudinal audio track.

⓭ PHONES jack and LEVEL control
For monitoring the sound of the Beta hi-fi or conventional longitudinal audio track with headphones. To switch between these two audio tracks use the B HI-FI MONITOR switch.
The LEVEL control adjusts the headphone volume.

⓮ B HI-FI MINITOR switch
When this switch is pressed once, the lamp lights up and the Beta hi-fi signals are directed to the level meters, AUDIO LINE OUT jacks and headphone jack. When the switch is pressed again, the lamp goes off and the longitudinal audio track are directed to the level meters, AUDIO LINE OUT jacks and headphone jack.

⑮ Check terminals

VIDEO: video RF signal
BETA HI-FI: Beta hi-fi RF signal
SW PULSE: switching pulse
GND: for circuit ground terminal of oscilloscope

⑯ HEAD HOURS meter

The supplied hours meter can be used for 2,000 hours at a time. After 2,000 hours unplug the meter from the socket, reverse it and plug it back into the socket. It will be ready for the next 2,000-hour count.

⑰ HIGH SPEED STANDBY indicator

Refer to the description of HIGH SPEED REW button ㉑ and HIGH SPEED FF button ⑱.
When about 1/6th of the tape has passed in the playback mode, this indicator starts blinking. In this case any tape run function except high-speed REW can be selected.
When the indicator lights constantly, all tape run functions including the high-speed FF/REW can be selected.
When the tape reaches a point 1/6th of the tape length away from the end, the indicator starts blinking again. In this case it is no longer possible to select the high-speed FF function.
If this indicator does not light at all, neither the HIGH SPEED REW nor the HIGH SPEED FF button can be activated.

⑱ HIGH SPEED FF button and indicator

Pressing this button releases the tape from the head drum to advance it very fast without causing further wear of the head drum and tape.
Please note that the high-speed FF function cannot be activated when the HIGH SPEED STANDBY indicator is off. Also when the HIGH SPEED STANDBY indicator blinks at the one sixth end of the tape it is not possible to activate this function.
During high-speed FF the indicator of the ▶▶▶ FF button lights.

⑲ ● REC button and indicator

Press to set the recorder in the recording pause mode. The REC and PAUSE indicators will light. To start recording press the ❚❚ PAUSE button.
One-button recording is possible by changing the internal wiring.

⑳ ❚❚ PAUSE button and indicator

Press to stop the tape for a moment during recording and playback or to start the recording from the recording pause and still mode.

㉑ HIGH SPEED REW button and indicator

Pressing this button releases the tape from the head drum to rewind it very fast without causing further wear of the head drum and tape.
Please note that the high-speed REW function cannot be activated when the HIGH SPEED STANDBY indicator is off. Also when the HIGH SPEED STANDBY indicator blinks at the one sixth beginning of the tape it is not possible to activate this function.
During high-speed REW the indicator of the ◀◀◀ REW button lights.

㉒ Tape run function buttons

◀◀ REW button and indicator
Press this button to rewind the tape. When this button is pressed during playback mode, a fast rewind playback picture is obtained.
▶▶ FF button and indicator
Press this button to advance the tape rapidly. When this button is pressed during playback mode, a fast forward playback picture is obtained.
▶ PLAY button and indicator
Press to playback the tape.
■ STOP button
Press to stop the tape.

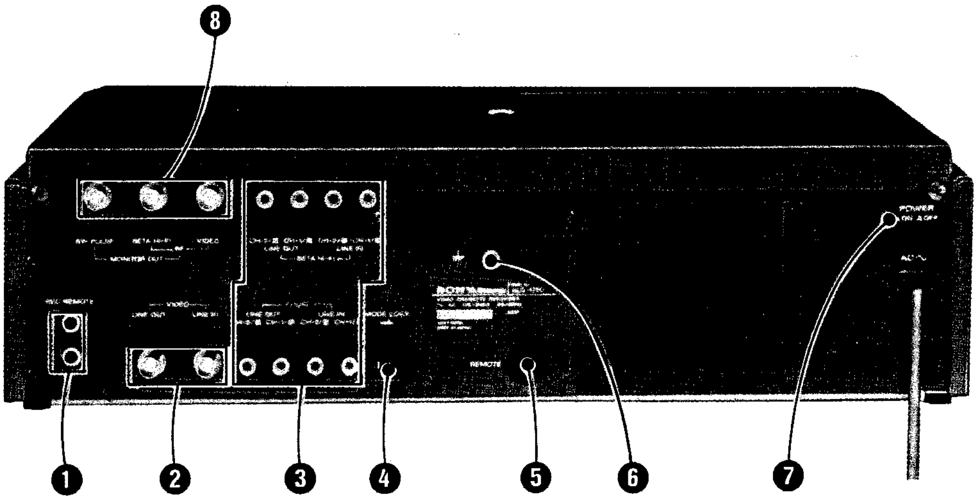
㉓ TRACKING control

If streaks or snow appear in the playback picture adjust this control. Normally the control should be set in the center detent position.

Note

When the level adjustments are finished, install the supplied acrylic plastic cover to the right-hand panel.

Rear



❶ REC REMOTE jacks
By shortcircuiting one of these jacks the recorder can be switched from stop mode to record mode. By opening the circuit a cassette will be ejected when the recorder stops.
For REC REMOTE operation, an internal wiring change is required: Cut out the jumper wire between 2 and 3 terminals on the CN615 on the SS-29 circuit board.

❷ VIDEO LINE OUT and LINE IN connectors
Connect the video signals to these BNC connectors.

❸ BETA HI-FI LINE IN/OUT and AUDIO LINE IN/OUT jacks
Input

Switch and indicator / Input	Normal/Beta hi-fi switch to AFM	Normal/Beta hi-fi switch to NORM
	BETA HI-FI indicator (yellow) ☼	BETA HI-FI indicator ○
AUDIO LINE IN	longitudinal track	both longitudinal and Beta hi-fi tracks
BETA HI-FI LINE IN	Beta hi-fi track	—

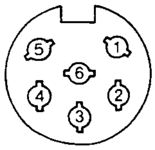
Output

Lamp / Output	MONITOR ☼B HI-FI☼	MONITOR B HI-FI
AUDIO LINE OUT	Playback of Beta hi-fi track	Playback of longitudinal track
BETA HI-FI LINE OUT	Playback of Beta hi-fi track	Playback of Bata hi-fi track

❹ MODE LOCK switch
When this switch is set in the direction of the arrow, the settings cannot be changed by mistake. This switch activates only when using the recording remote control unit.

❺ REMOTE connector (6-pin, DIN)
Connect a full-function remote control unit to this connector.

Pin assignment



1 +12 V OUT (150 mA max.)
2 EJECT
3 GND
4 INHIBIT
5 $\overline{\text{IR}}$
6 REC ANSWER BACK

Original function
SOUND ONLY ON/OFF, COUNTER RESET,
HI-FF, HI-REW, EJECT

Compatible with the SL-HF100P
PB, FF, REW, CUE/REV,
STOP, REC, PAUSE,
LIMITER ON/OFF, BNR ON/OFF,
POWER ON/OFF,
PB SOUND SELECTION, AUTO/CONVENTIONAL

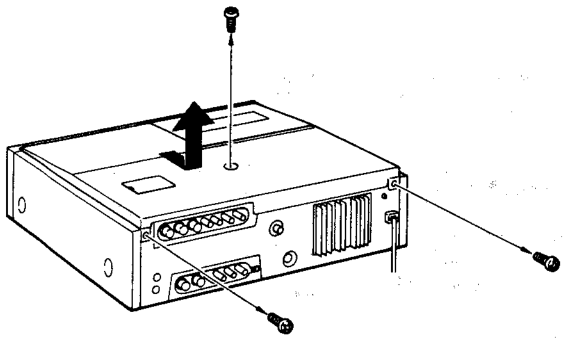
❻ ⏚ (frame ground) terminal
Connect to the system ground terminal.

❼ POWER switch
This is the mains power on/off switch.

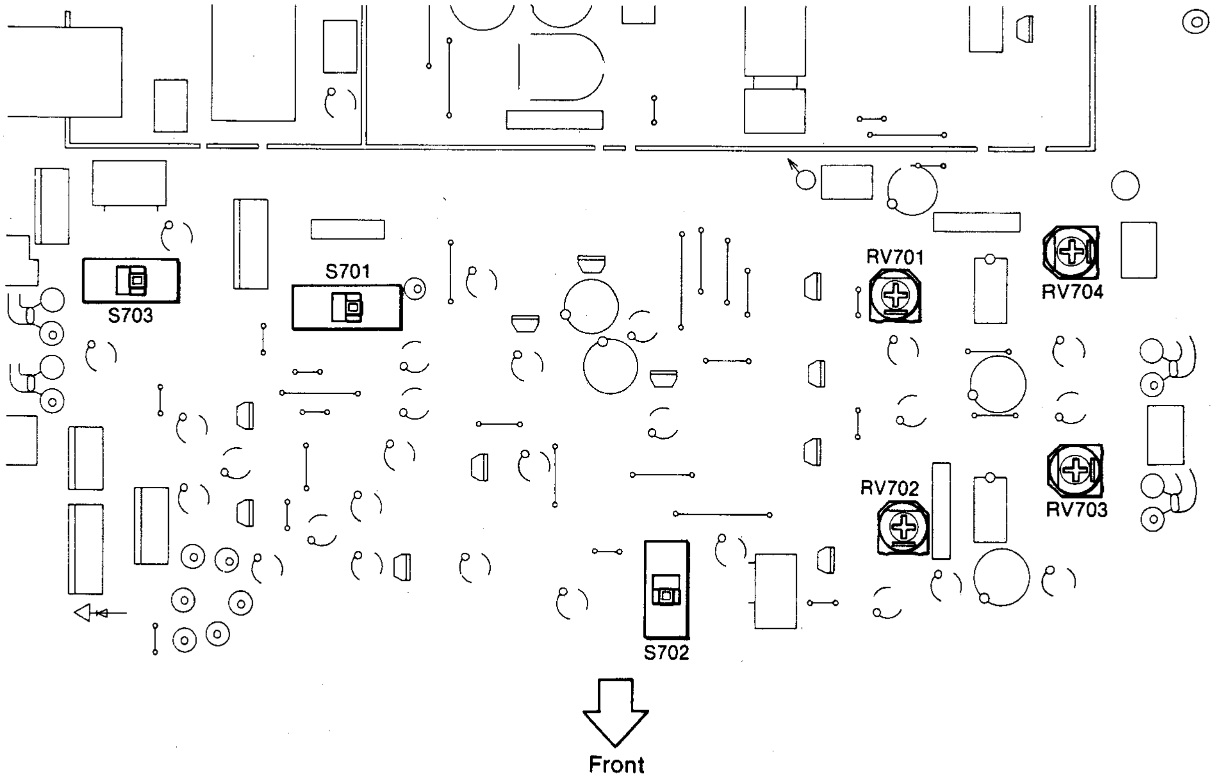
❽ MONITOR OUT connectors
To monitor the following signals.
SW PULSE connector: switching pulse
BETA HI-FI connector: Beta hi-fi RF signal
VIDEO connector: video RF signal

1-5. SWITCHES AND CONTROLS ON THE RP-18 CIRCUIT BOARD

Open the top panel as illustrated.

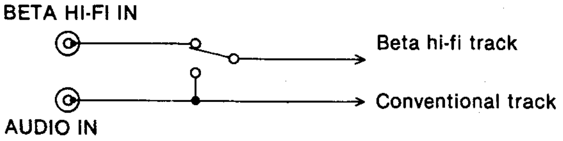


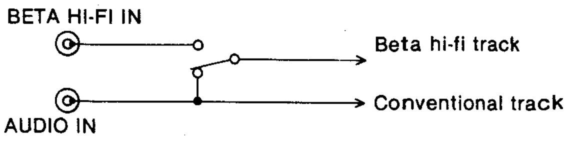
RP-18 circuit board


S703
S701
RV701
RV704
RV702
RV703
S702
Front

S701: Normal/Beta hi-fi switch

For Beta-hi-fi recording, this switch selects the line input for only Beta hi-fi track or for both Beta hi-fi conventional audio track.


BETA HI-FI IN
Beta hi-fi track
Conventional track
AUDIO IN


BETA HI-FI IN
Beta hi-fi track
Conventional track
AUDIO IN

S702: Normal/AFM audio line input level selector
Adjusts the input level of the AUDIO IN connectors. Set to 0 dBs, -5 dBs or −10 dBs. Factory set at −10 dBs.

S703: AFM audio line input level selector
Adjusts the input level of the BETA HI-FI IN connectors. Set to 0 dBs, -5 dBs or −10 dBs. Factory set at −10 dBs.

RV701: Normal/AFM CH1 line output level control
Adjusts the output level of the AUDIO OUT connectors. This control is continuously adjustable from 0 dBs to −10 dBs. Factory set at −10 dBs.

RV702: Normal/AFM CH2 line output level control
Refer to the RV701.

RV703: AFM CH2 line output level control
Refer to the RV704.

RV704: AFM CH1 line output level control
Adjusts the output level of the BETA HI-FI OUT connectors. This control is continuously adjustable from 0 dBs to −10 dBs. Factory set at −10 dBs.

1-6. INTERNAL WIRING CHANGE

WIRING FOR ONE-BUTTON RECORDING

Cut off the jumper wire between 2 and 3 terminals on the CN615 on the SS-29 circuit board.

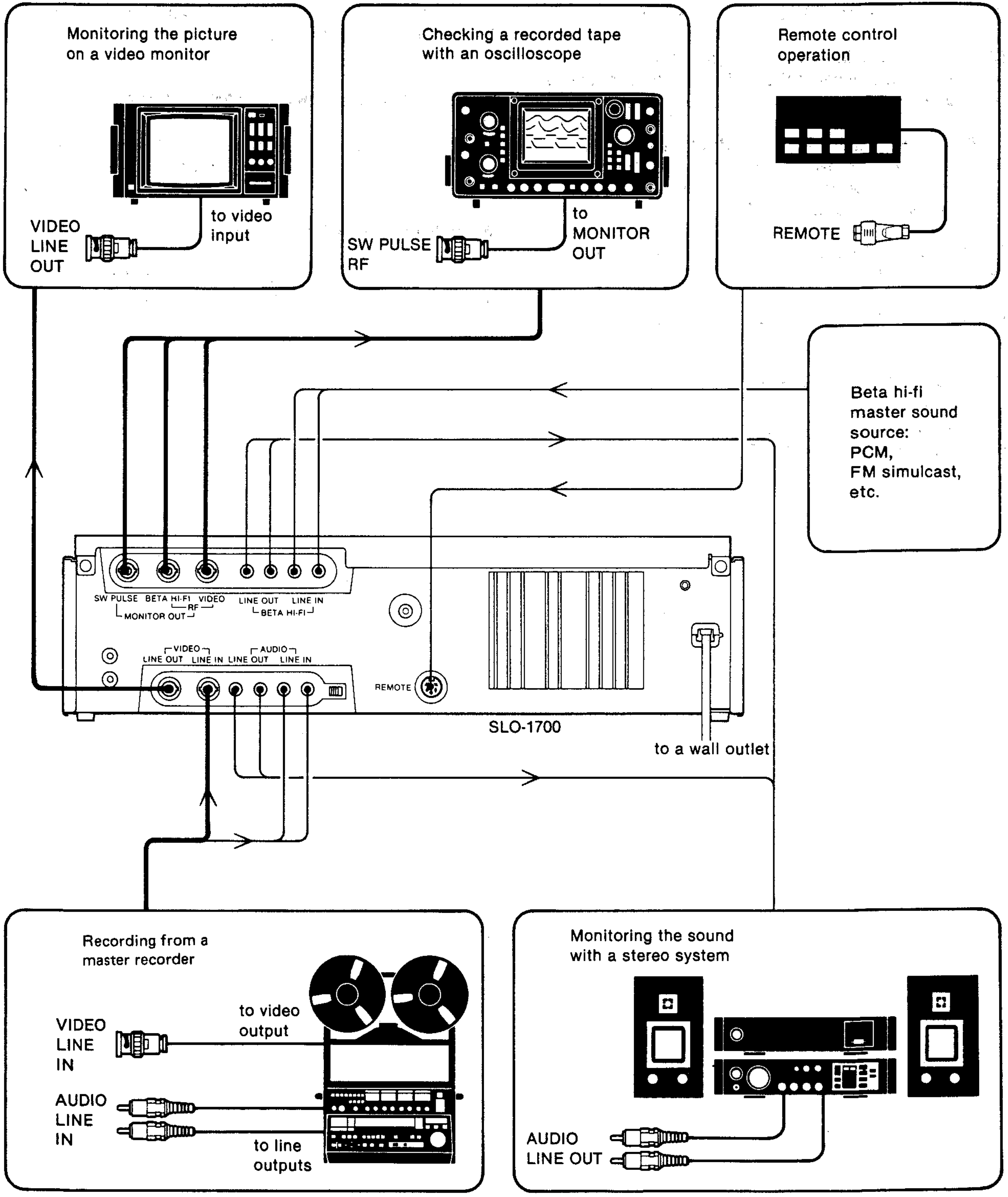
WIRING FOR REC REMOTE CONNECTION

Cut off the jumper wire between 2 and 3 terminals on the CN615 on the SS-29 circuit board.

WIRING FOR USING AS A PLAYER

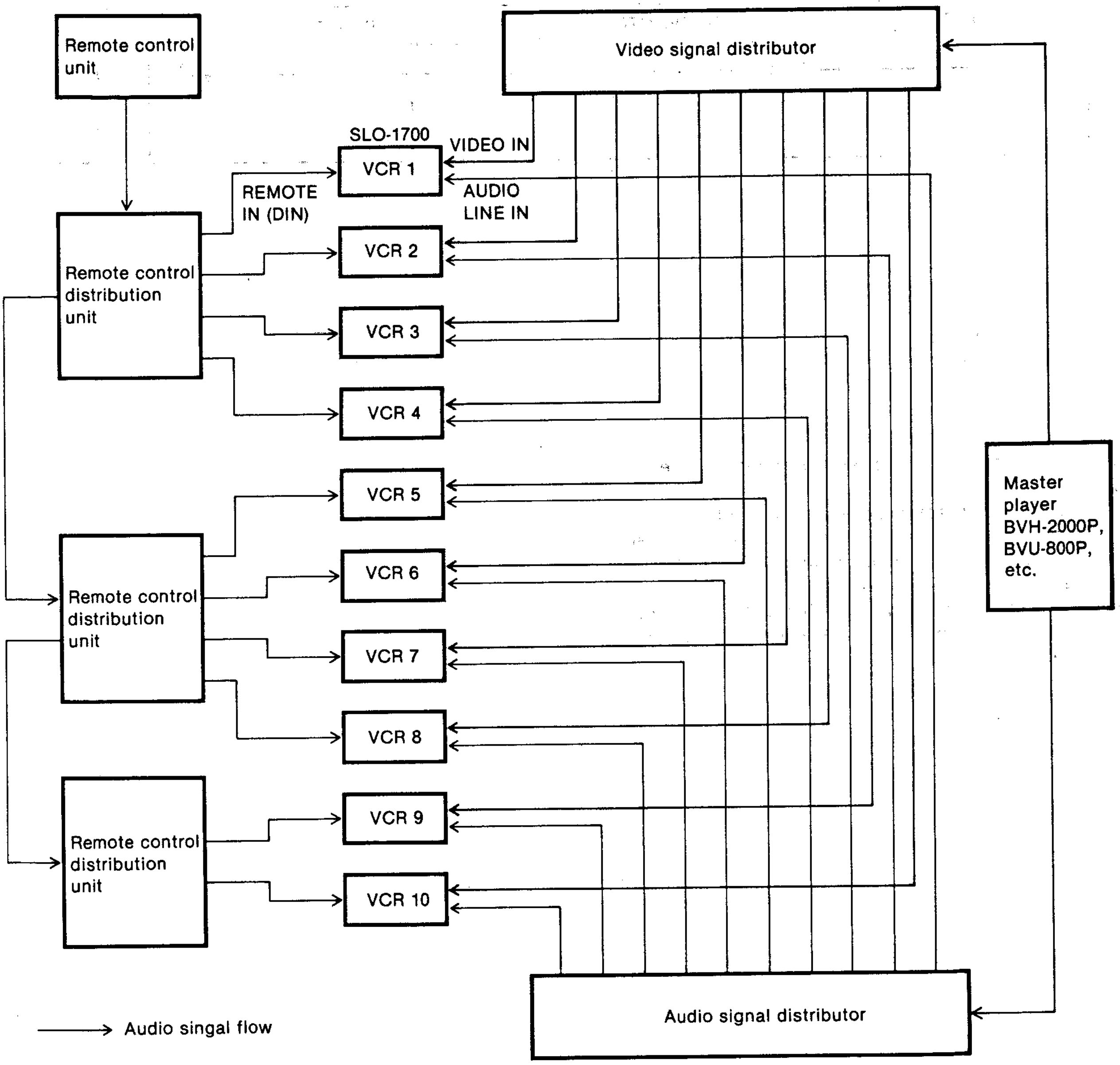
Remove the brown wire on the RL-19 circuit board. Any recording cannot be made.

1-7. SYSTEM CONNECTIONS


Monitoring the picture on a video monitor
VIDEO LINE OUT
to video input
Checking a recorded tape with an oscilloscope
SW PULSE RF
to MONITOR OUT
Remote control operation
REMOTE
Beta hi-fi master sound source: PCM, FM simulcast, etc.
SW PULSE
BETA HI-FI
VIDEO
RF
MONITOR OUT
LINE OUT
LINE IN
BETA HI-FI
VIDEO
AUDIO
LINE OUT
LINE IN
LINE OUT
LINE IN
REMOTE
SLO-1700
to a wall outlet
Recording from a master recorder
VIDEO LINE IN
to video output
AUDIO LINE IN
to line outputs
Monitoring the sound with a stereo system
AUDIO LINE OUT

1-8. MULTIPLE RECORDING CONNECTIONS

FULL-FUNCTION REMOTE CONTROL CONNECTION

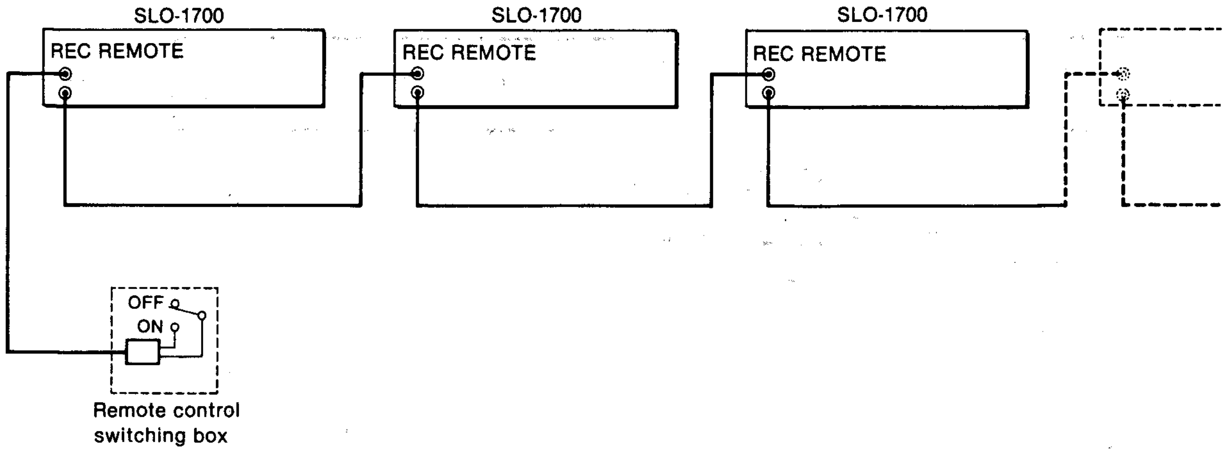

Remote control unit
Video signal distributor
SLO-1700
VCR 1
VIDEO IN
AUDIO LINE IN
REMOTE IN (DIN)
VCR 2
Remote control distribution unit
VCR 3
VCR 4
VCR 5
Master player BVH-2000P, BVU-800P, etc.
VCR 6
Remote control distribution unit
VCR 7
VCR 8
Remote control distribution unit
VCR 9
VCR 10
Audio signal distributor

⟶ Audio singal flow

⟶ Video signal flow

REMOTE connector: DIN 6P

REC REMOTE CONNECTION (CASCADE CONNECTION)


SLO-1700
REC REMOTE
SLO-1700
REC REMOTE
SLO-1700
REC REMOTE
OFF
ON
Remote control switching box

- To monitor the video signal, connect the video monitor to the recorder.
- As an audio master player, a video player, a PCM audio processor or a professional tape recorder can be used. In this case, a video-audio synchronizer is required.
- Be sure that the MODE LOCK switch is locked, so that the function button on the front panel cannot be operated.

1-9. RECORDING

Caution: Make sure that the inserted cassette is the correct one.
When a new recording is made on a previously recorded cassette, the previous recording will be automatically erased even if the cassette safety tab has been removed.

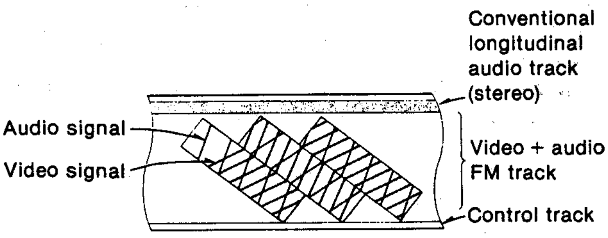
1 Press the rear POWER switch (⏏ ON).
2 Press the ON/STANDBY switch so that the green indicator lights up.
3 Press the EJECT button and insert a cassette with the round window to the left.
If the tape is slack, it is not thread and is ejected. In this case, take up any slack in the tape.
4 Set the BNR and LMTR switch accordingly.
5 Adjust the recording level. See "RECORDING LEVEL ADJUSTMENT".
6 Press the ● REC button. The recorder will be set into the recording pause mode.
7 Release the recording pause mode by pressing the II PAUSE button.

● One-button recording is possible by changing the internal wiring.

BETA HI-FI PAL RECORDING SYSTEM

For Beta hi-fi recording, audio signals are recorded on the video track together with the video signals.
In this recorder's Beta hi-fi PAL system, audio signals are recorded first, using the 2 audio heads, then video signals are recorded over the audio signals with an azimuth offset, using the 2 video heads.
Beta hi-fi audio signals are frequency-modulated and recorded on 2 channels, so you can record sound clearly superior to that of the conventional longitudinal audio recording.

Beta hi-fi PAL recording pattern on the video tape:



RECORDING LEVEL ADJUSTMENT

Adjust the REC LEVEL controls so that the meters deflect to "0" and only occasionally at peak signals into the red area.
For adjusting the Beta hi-fi recording level press the B HI-FI MONITOR switch (lamp lights up) and use the REC LEVEL (BETA HI-FI) controls.
For adjusting the conventional longitudinal audio recording level deactivate the B HI-FI MONITOR switch (lamp goes off) and use the REC LEVEL (NORMAL) controls.
When recording a program source with wide dynamic range on the conventional longitudinal audio track, the signal may be distorted in signal peaks. In this case the LMTR switch should be engaged.

1-10. PLAYBACK

1 Press the rear POWER switch (⏏ ON).

2 Press the ON/STANDBY switch so that the green indicator lights up.

3 Press the EJECT button and insert the cassette with the round window to the left.
If the tape is slack, it is not thread and is ejected. In this case, take up any slack in the tape.

4 Set the BNR switch accordingly.

5 Press the ▶ PLAY button.

When a Beta hi-fi recorded tape is played back
The Beta hi-fi lamp lights up.
To monitor the level of the Beta hi-fi track with the LEVEL meters and the Beta hi-fi sound with the headphones
→ press the B HI-FI MONITOR switch on (lamp lights up).
To monitor the level of the longitudinal audio track with the LEVEL meters and the sound of the longitudinal audio track with the headphones
→ press the B HI-FI MONITOR switch off (lamp goes off).

HIGH-SPEED FF/REW

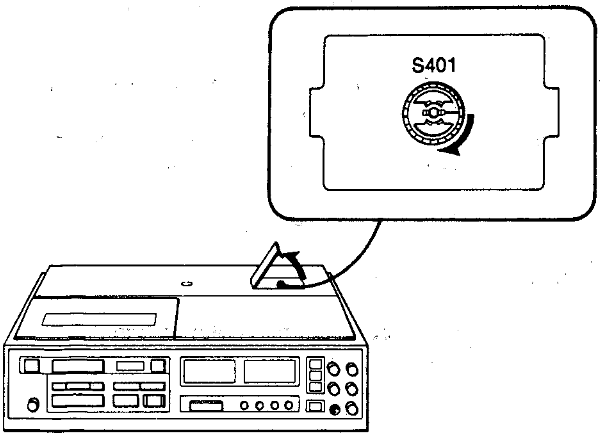
The high-speed FF/REW function releases the tape from the head drum to rewind it very fast without causing further wear of the heads and tape. This function helps to search checking points faster.
The recorder detects the type of tape and running point automatically. The HIGH SPEED STANDBY indicator lights after approximately 12 seconds of recording or playback. The indicator blinks at the beginning or last 1/6th of the tape.
When the cassette is ejected, the high speed function will be reset.
To resume the high-speed function the tape must be rewound to the beginning.

Notes on the high-speed FF operation
● The recorder can be set from stop, playback, FF, REW or high-speed REW mode to high-speed FF mode.
● When the HIGH SPEED STANDBY indicator lights up or when the indicator blinks at the beginnng 1/6th of the tape, the HI-SPEED FF button activates.
● When the indicator blinks at the last 1/6th of the tape, the HI-SPEED FF button does not activate.
● When the tape reaches the last 1/6th position during high-speed FF mode, the tape running mode will change to the normal FF mode.

The high-speed REW operation is the same as that of the high-speed FF except for the direction of the tape transport.

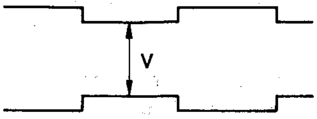
1-11. RECORDING CURRENT CONTROL

Remove a small lid on the top panel.



Adjust the video recording current control as follows. This adjustment is required first time the unit is operated, and periodically thereafter.

1 Record the test colour bar pattern and play back with the same recorder. (Be sure that nothing is connected to the AUDIO LINE IN jacks.)
2 Measure the Beta hi-fi playback RF output wave by connecting the synchroscope to the front panel check terminal. (Trigger: RF switching pulse)



Measure the lower level channel at the middle point.

3 When the voltage is equal to or less than 110 mV, turn the control 1 click.
4 Record and play back the colour bar pattern with the same recorder and make sure that the voltage is equal to or more than 110 mV.

Notes

- For control adjustment use the same type of tape as that used for tape copying.
- When using other types of tapes or tapes of other manufacturers, adjust the current control again.

After the second adjustment

- It is possible to check the tape recorded following the above described procedures using the SLO-1700 reference recorder.
- Commercially available recorded tape can be used for adjustment. In this case, adjust the output level referring to the originally recorded level.

1-12. HEAD HOURS METER

The HEAD HOURS meter counts the cumulative hours that the video heads have operated. The time accuracy is within ±10%. The meter can be used repeatedly.

To reuse the meter

When the meter reaches 2,000 hours, unplug the meter from the socket. Reverse it and plug it back into the socket. It will be ready for the next 2,000-hour count. (When the meter is in the middle of the scale, reset it to the either end before counting the next operational time.)

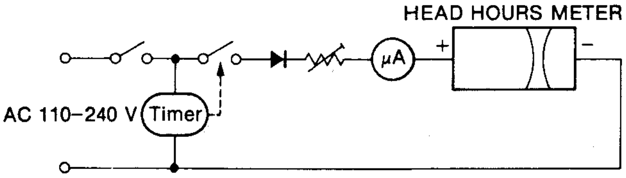
Note

When the meter goes off the scale (beyond 2,000 hours) and the column of mercury cannot be seen, the meter cannot be used again.

How to reset the meter to zero.

Before operation

- Use an ammeter which shows an average current.
- An electric charge of 9,500 μAh is required to reset the full scale of the meter.
- Do not adjust the current higher than 475 μA.



1 Connect the + terminal of the circuit to the end (TM2 or 2000) where the meter is to be reset.
2 Set the current to the desired level under 475 μA.
3 Set the conected timer to the proper value.

The electric charge required for resetting is in proportion to the distance which the mercury moved. When the mercury is completely on one end, an electric charge of 9,500 μAh is needed. When the mercury is between the scale ends, the electric charge value can be calculated proportionally. To get the setting time, divide the electric charge value by the current used.

e.g. To reset the full scale with a current of 475 μA:
9,500 μAh ÷ 475 μA = 20 h
It takes 20 hours.

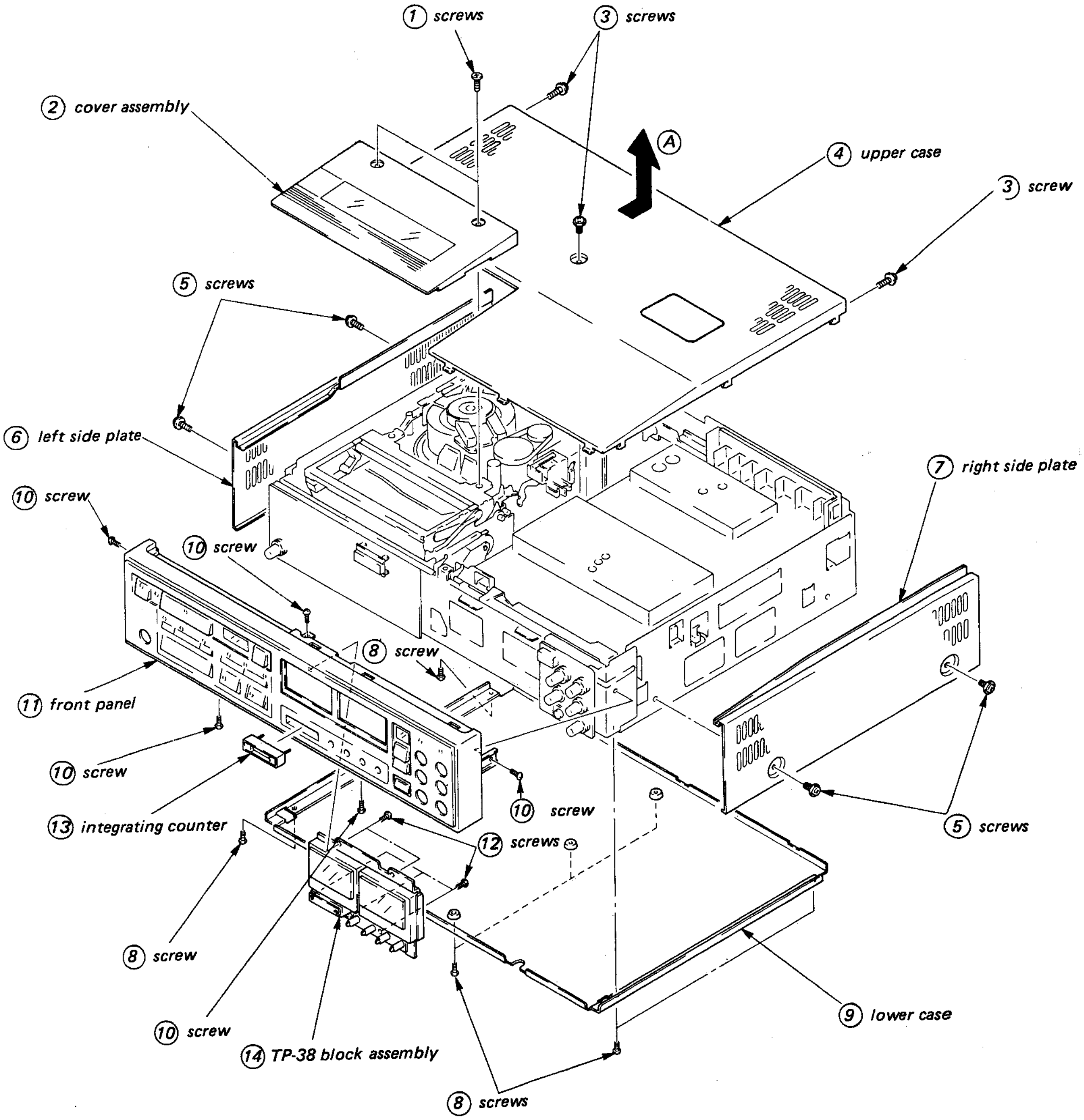
Notes on operation

- Do not measure the impedance of the HEAD HOURS meter with a circuit tester. This might damage the electrolysis function and break the meter.
- Operate only in temperatures within 10°C to 40°C.

SECTION 2
DISASSEMBLY

2-1. REMOVAL OF THE UPPER CASE AND FRONT PANEL

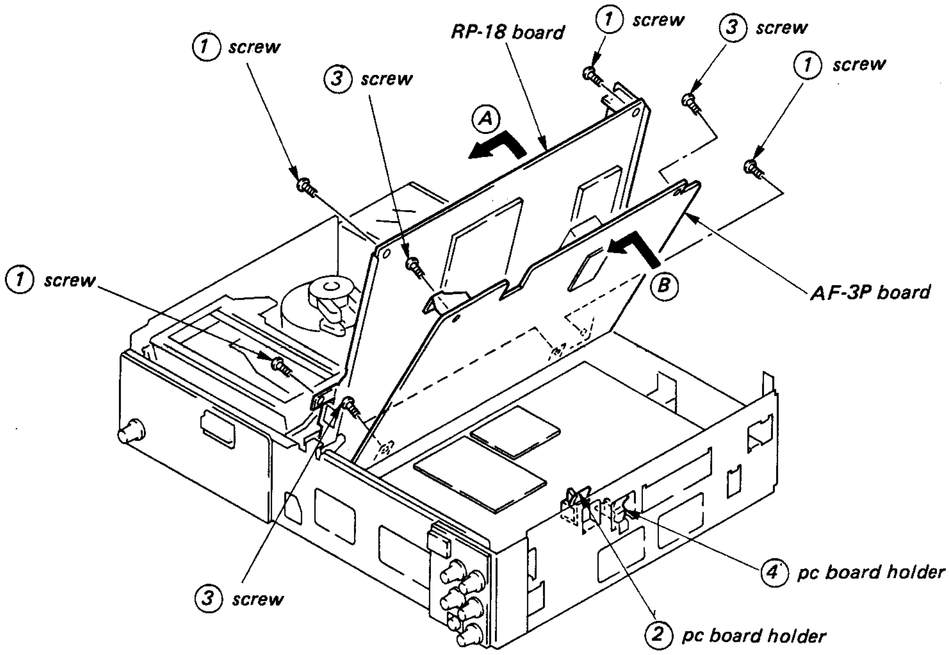
1) Remove the two screws①.
2) Remove the cover assembly②.
3) Remove the three screws③.
4) Remove the upper case ④ in the direction shown by the arrow Ⓐ.
5) Remove the four screws⑤.
6) Remove the left side plate ⑥ and right side plate⑦.
7) Remove the seven screws⑧.
8) Remove the lower case⑨.
9) Remove the five screws ⑩.
10) Remove the front panel ⑪.
11) Remove the five screws ⑫.
12) Remove the integrating counter ⑬ and TP-38 block assembly ⑭.



① screws
③ screws
② cover assembly
Ⓐ
④ upper case
③ screw
⑤ screws
⑥ left side plate
⑦ right side plate
⑩ screw
⑩ screw
⑧ screw
⑪ front panel
⑩ screw
⑬ integrating counter
⑩ screw
⑫ screws
⑤ screws
⑧ screw
⑩ screw
⑭ TP-38 block assembly
⑨ lower case
⑧ screws

2-2. REMOVAL OF THE RP-18 BOARD AND AF-3P BOARD

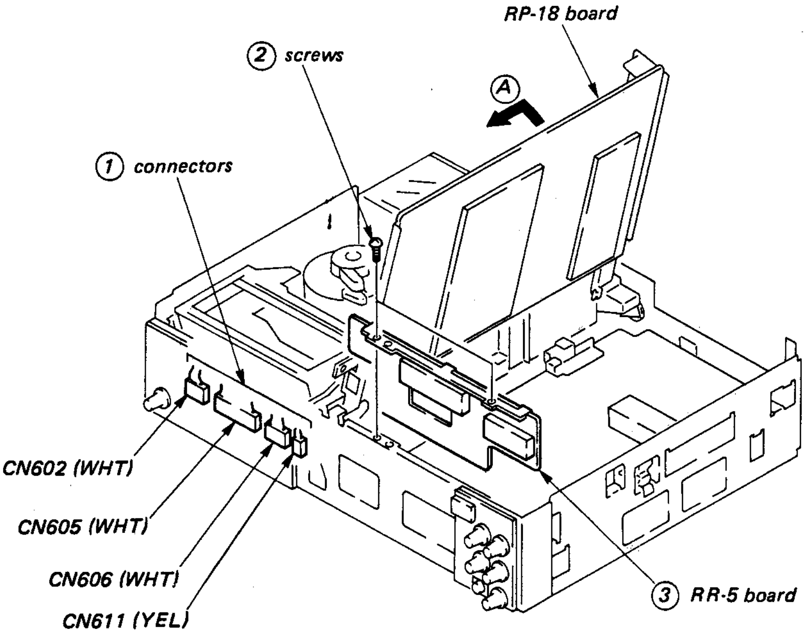
1) Remove the four screws ①.
2) Remove the claw of pc board holder ② and the RP-18 board in the direction shown by the arrow Ⓐ.
3) Remove the four screws ③.
4) Remove the claw of pc board holder ④.
5) Remove the AF-3P board in the direction shown by the arrow Ⓑ.



① screw
③ screw
RP-18 board
① screw
③ screw
① screw
Ⓐ
① screw
Ⓑ
AF-3P board
④ pc board holder
③ screw
② pc board holder

2-3. REMOVAL OF THE RR-5 BOARD

1) Open the RP-18 board in the direction shown by the arrow Ⓐ.
2) Pull out the four connectors ① from the SS-29 board.
3) Remove the two screws ②.
4) Remove the RR-5 board ③.

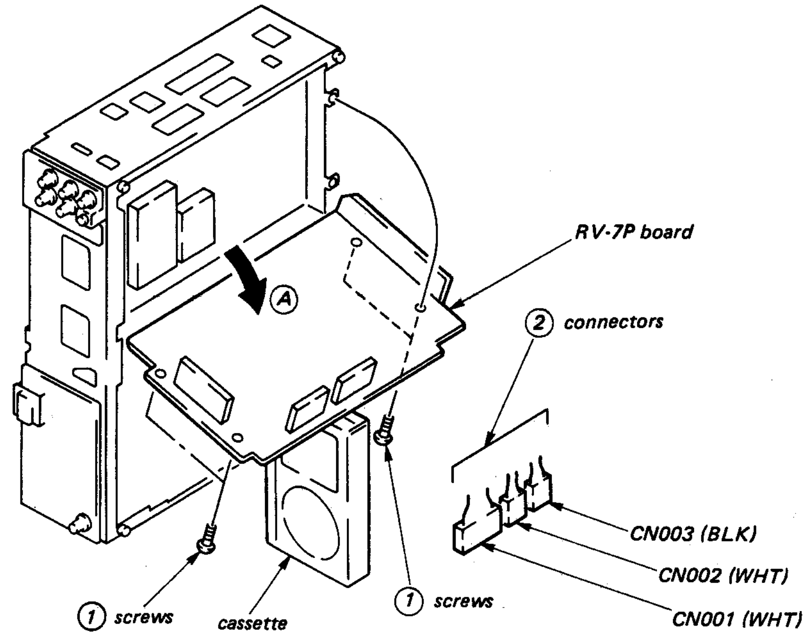


RP-18 board
② screws
Ⓐ
① connectors
CN602 (WHT)
CN605 (WHT)
CN606 (WHT)
CN611 (YEL)
③ RR-5 board

2-4. REMOVAL OF THE MECHANICAL CHASSIS BLOCK ASSEMBLY

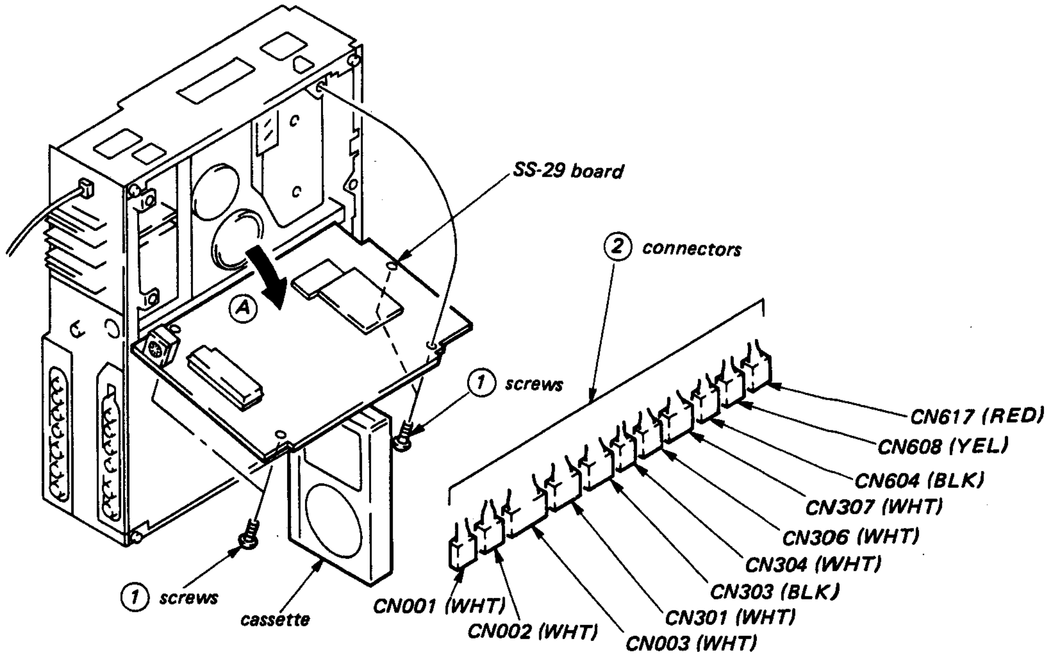
2-4-1. Removal of the RV-7P Board

1) Stand the set with the left side panel on the bottom.
2) Remove the four screws ①.
3) Remove the RV-7P board in the direction shown by the arrow Ⓐ and rest it on a cassette.
4) Pull out the three connectors ② from the AM-6 board.


RV-7P board
② connectors
Ⓐ
CN003 (BLK)
CN002 (WHT)
CN001 (WHT)
① screws
cassette
① screws

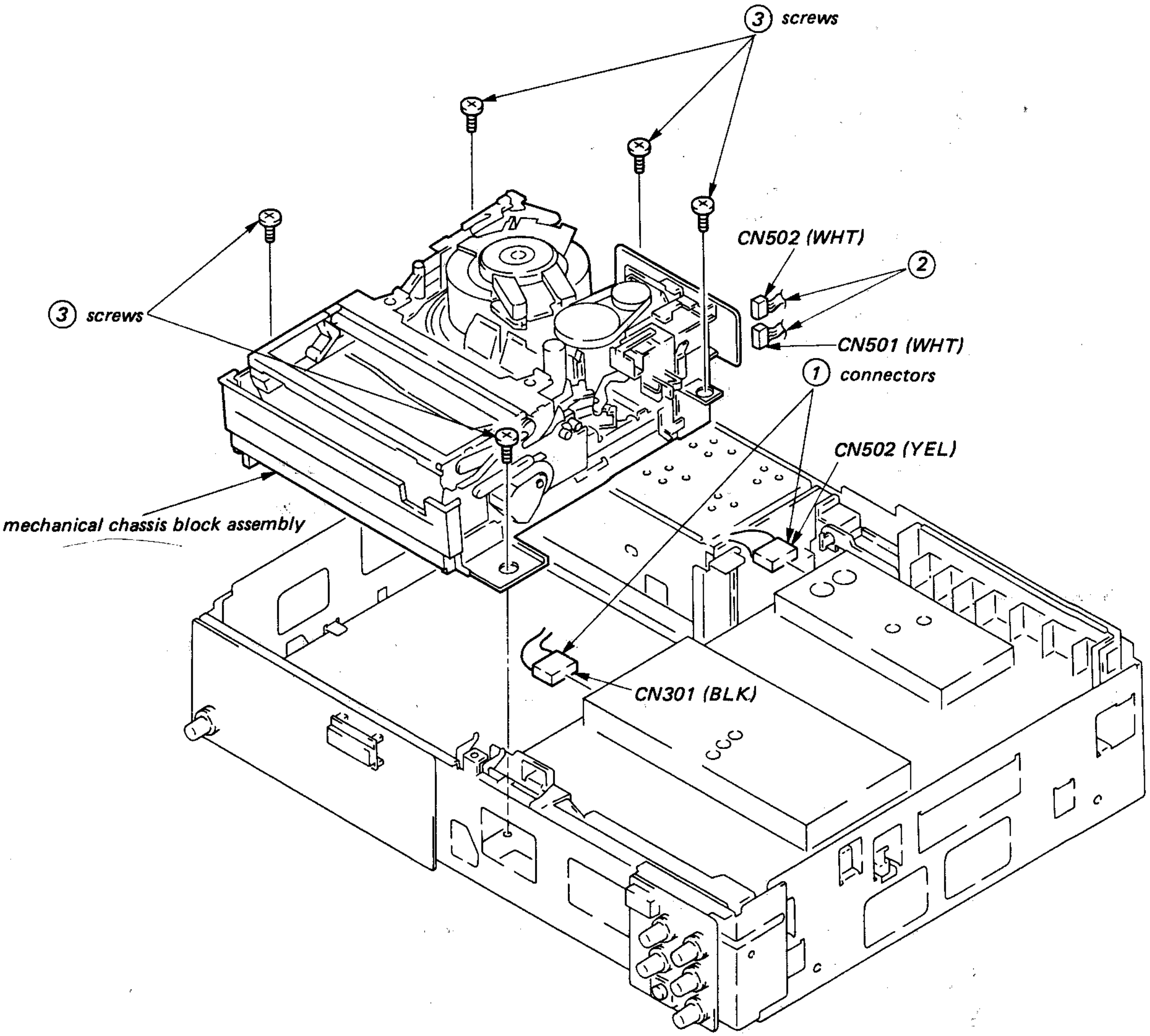
2-4-2. Removal of the SS-29 Board

1) Stand the set with the right side panel on the bottom.
2) Remove the four screws ①.
3) Remove the SS-29 board in the direction shown by the arrow Ⓐ and rest it on a cassette.
4) Pull out the eleven connectors ② from the SS-29 board.


SS-29 board
② connectors
Ⓐ
① screws
CN617 (RED)
CN608 (YEL)
CN604 (BLK)
CN307 (WHT)
CN306 (WHT)
CN304 (WHT)
CN303 (BLK)
CN301 (WHT)
CN003 (WHT)
CN002 (WHT)
CN001 (WHT)
① screws
cassette

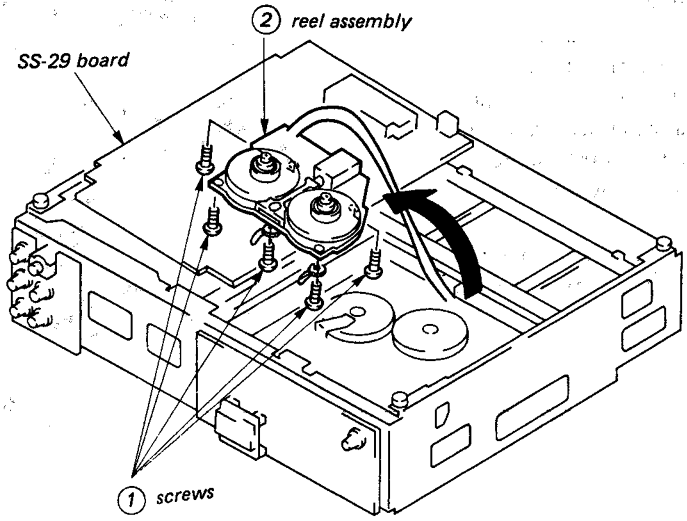
2-4-3. Removal of the Mechanical Chassis Block ASSEMBLY

1) Pull out the connectors ① from the RP-18 board.
2) Pull out the connectors ② from the RL-19 board.
3) Remove the five screws ③.
4) Remove the mechanical chassis block assembly.


③ screws
③ screws
CN502 (WHT)
②
CN501 (WHT)
① connectors
CN502 (YEL)
mechanical chassis block assembly
CN301 (BLK)

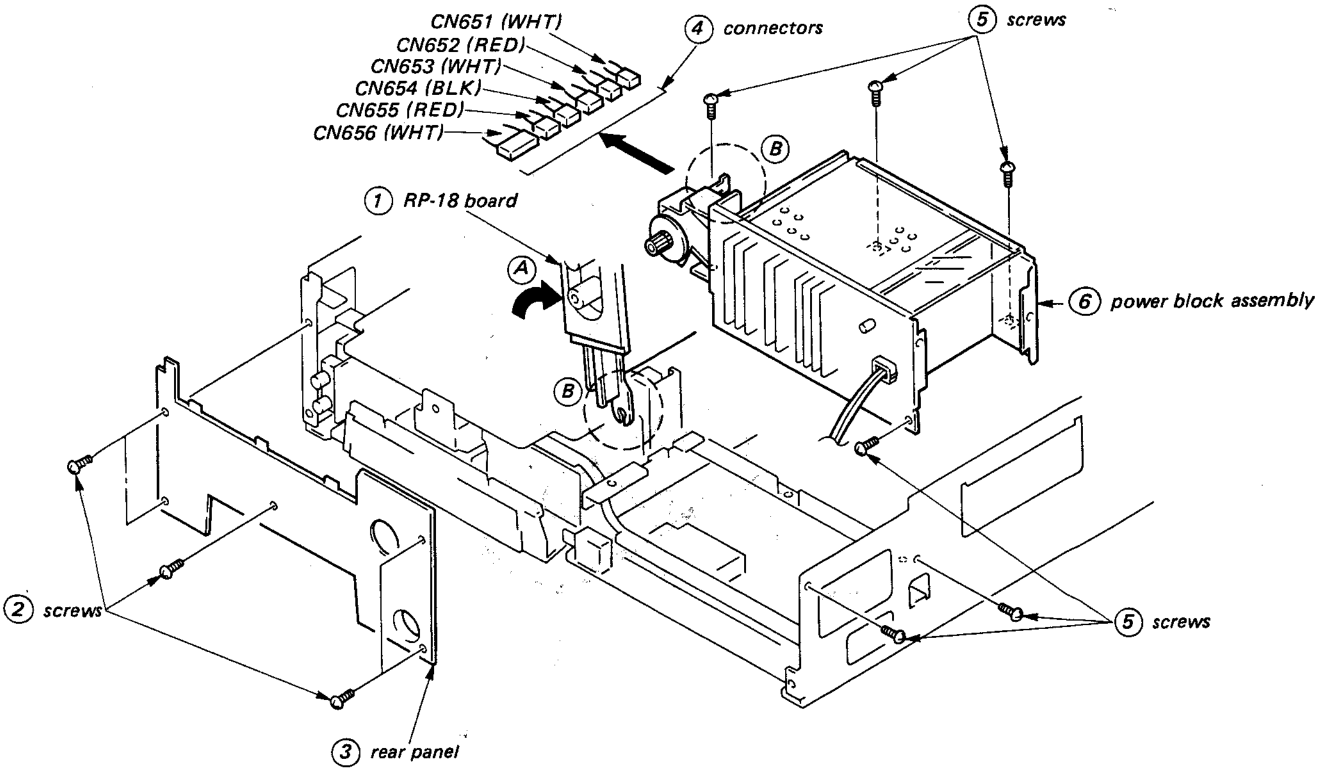
2-5. REMOVAL OF THE REEL ASSEMBLY

1) Place the set upside down.
2) Remove the five screws ①.
3) Remove the reel assembly ②.


② reel assembly
SS-29 board
① screws

2-6. REMOVAL OF THE POWER BLOCK ASSEMBLY

1) Open the RP-18 board ① in the direction shown by the arrow Ⓐ.
2) Disconnect part Ⓑ.
3) Remove the five screws ②.
4) Remove the rear panel ③.
5) Pull out the six connectors ④ from the D board.
6) Remove the six screws ⑤.
7) Remove the power block assembly ⑥.


CN651 (WHT)
CN652 (RED)
CN653 (WHT)
CN654 (BLK)
CN655 (RED)
CN656 (WHT)
④ connectors
⑤ screws
Ⓑ
① RP-18 board
Ⓐ
Ⓑ
⑥ power block assembly
② screws
⑤ screws
③ rear panel

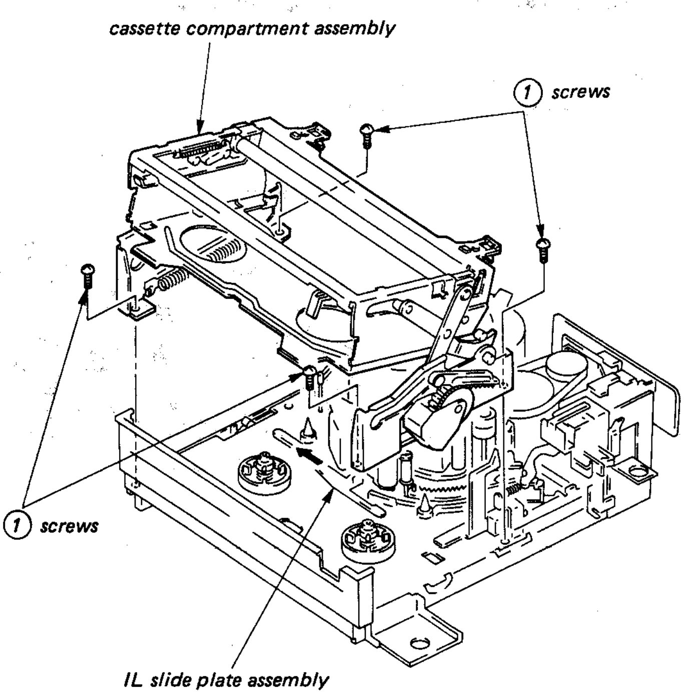
2-7. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

1) The stopper slips out and the cassette compartment assembly moves up when the IL sliding plate is slided in the arrow direction.

   Note: The cassette compartment assembly is lifted up by a spring this time. Hold the cassette compartment assembly lightly by a hand and carefully watch so that it is not lifted upward suddenly.

2) Unscrew four screws ① and remove the cassette compartment by lifting it up.

   Note: When removing the cassette compartment be careful not to hook it on the tension pick-up.

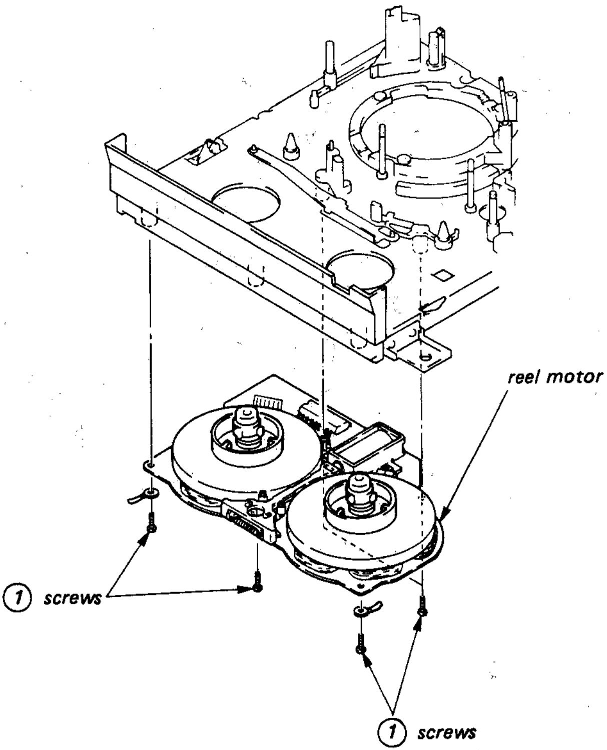


cassette compartment assembly
① screws
① screws
IL slide plate assembly

2-8. REMOVAL OF REEL MOTOR

1) Unscrew the five mounting screws ① on the rear of the chassis and remove the reel motor body.

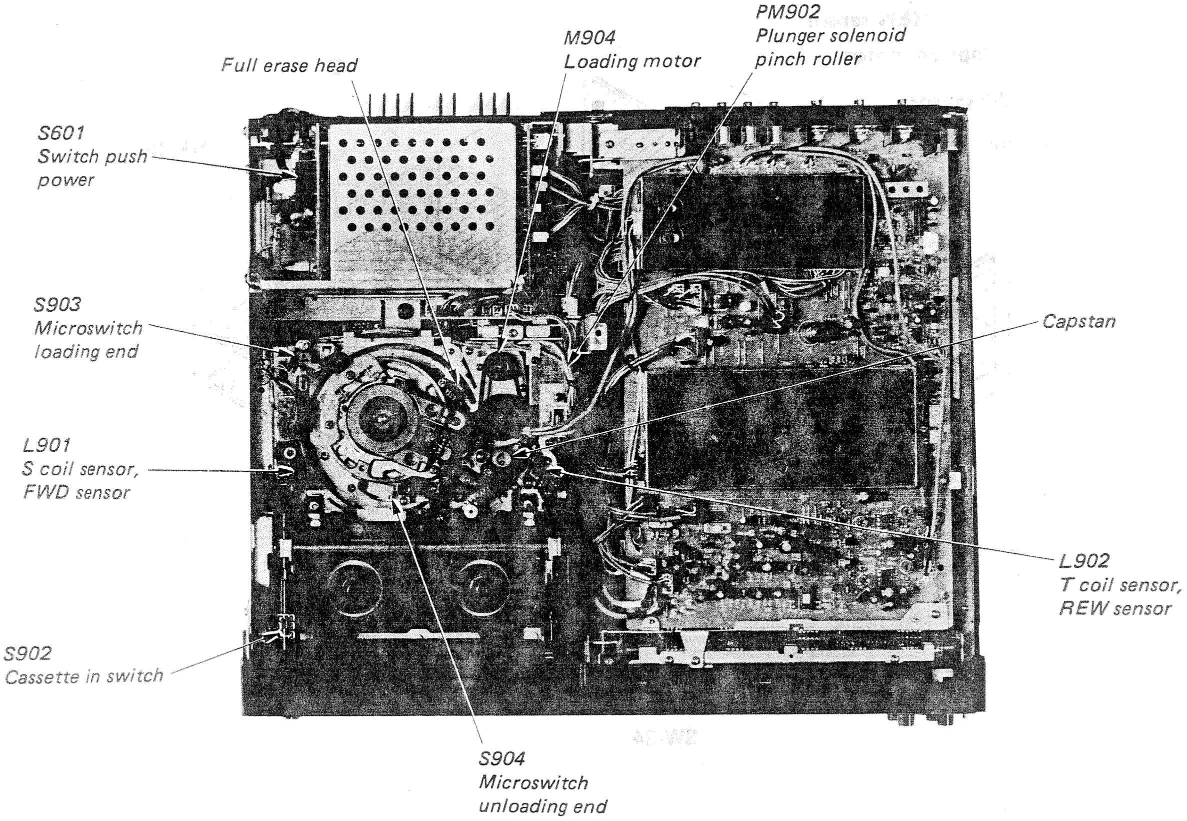
   Note: The rotor section can be removed by pulling it straight up.



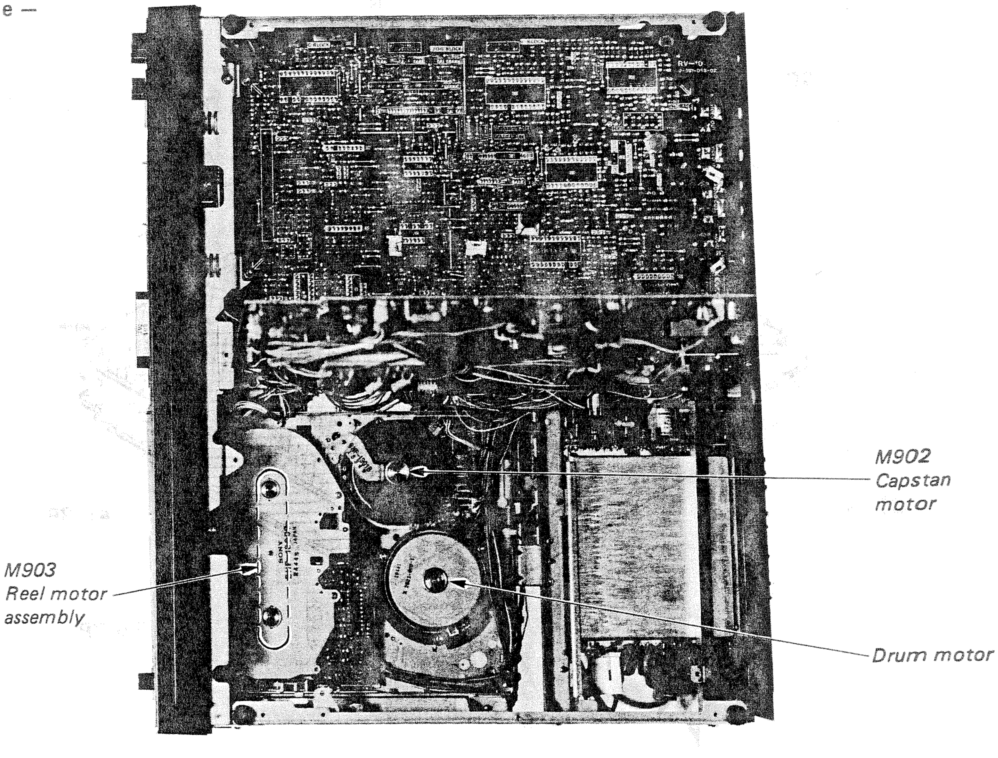
reel motor
① screws
① screws

2-9. INTERNAL VIEW

– Top Side –

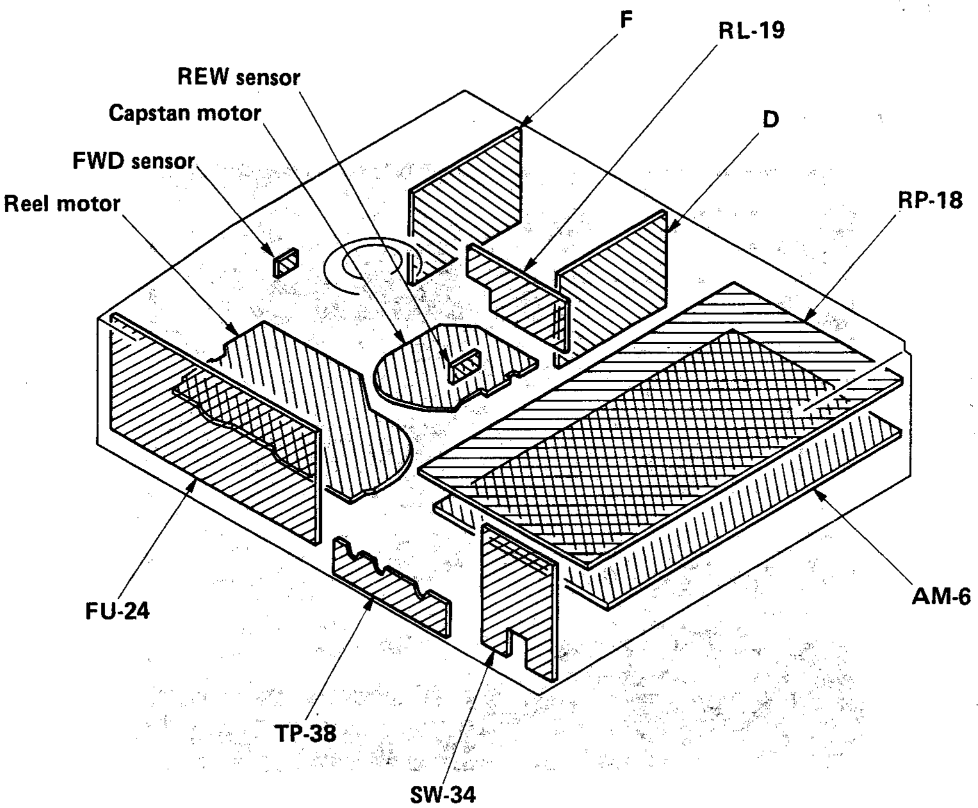

PM902
Plunger solenoid
pinch roller
M904
Loading motor
Full erase head
S601
Switch push
power
S903
Microswitch
loading end
Capstan
L901
S coil sensor,
FWD sensor
L902
T coil sensor,
REW sensor
S902
Cassette in switch
S904
Microswitch
unloading end

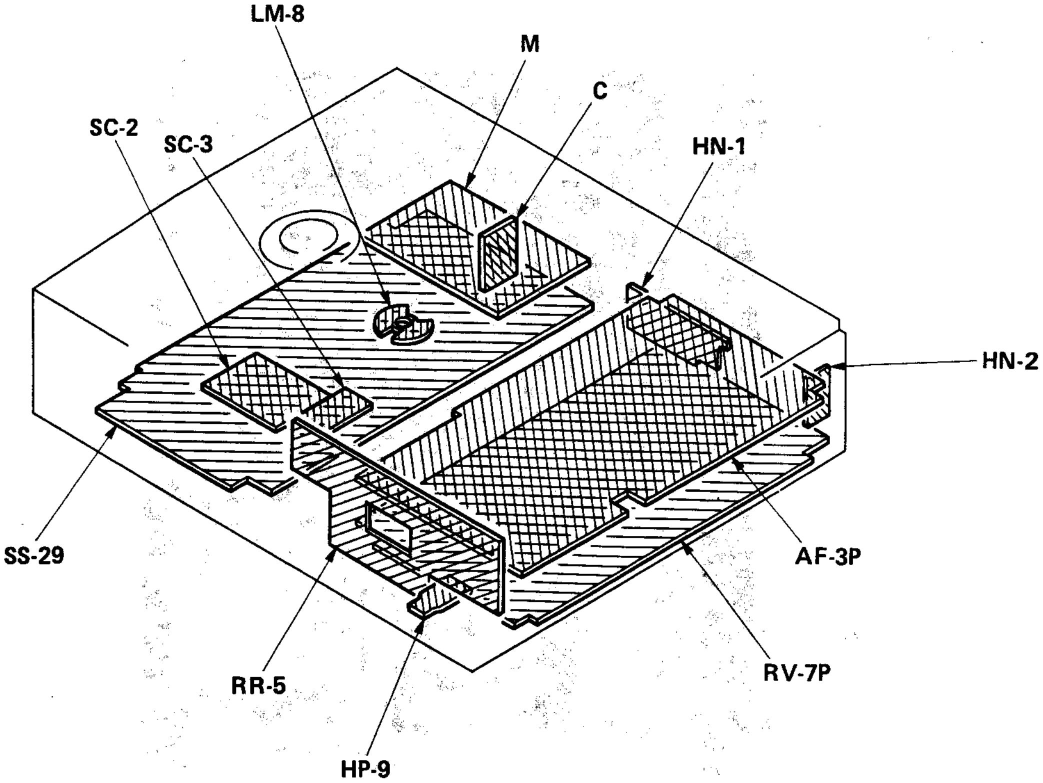
– Bottom Side –


M902
Capstan
motor
M903
Reel motor
assembly
Drum motor

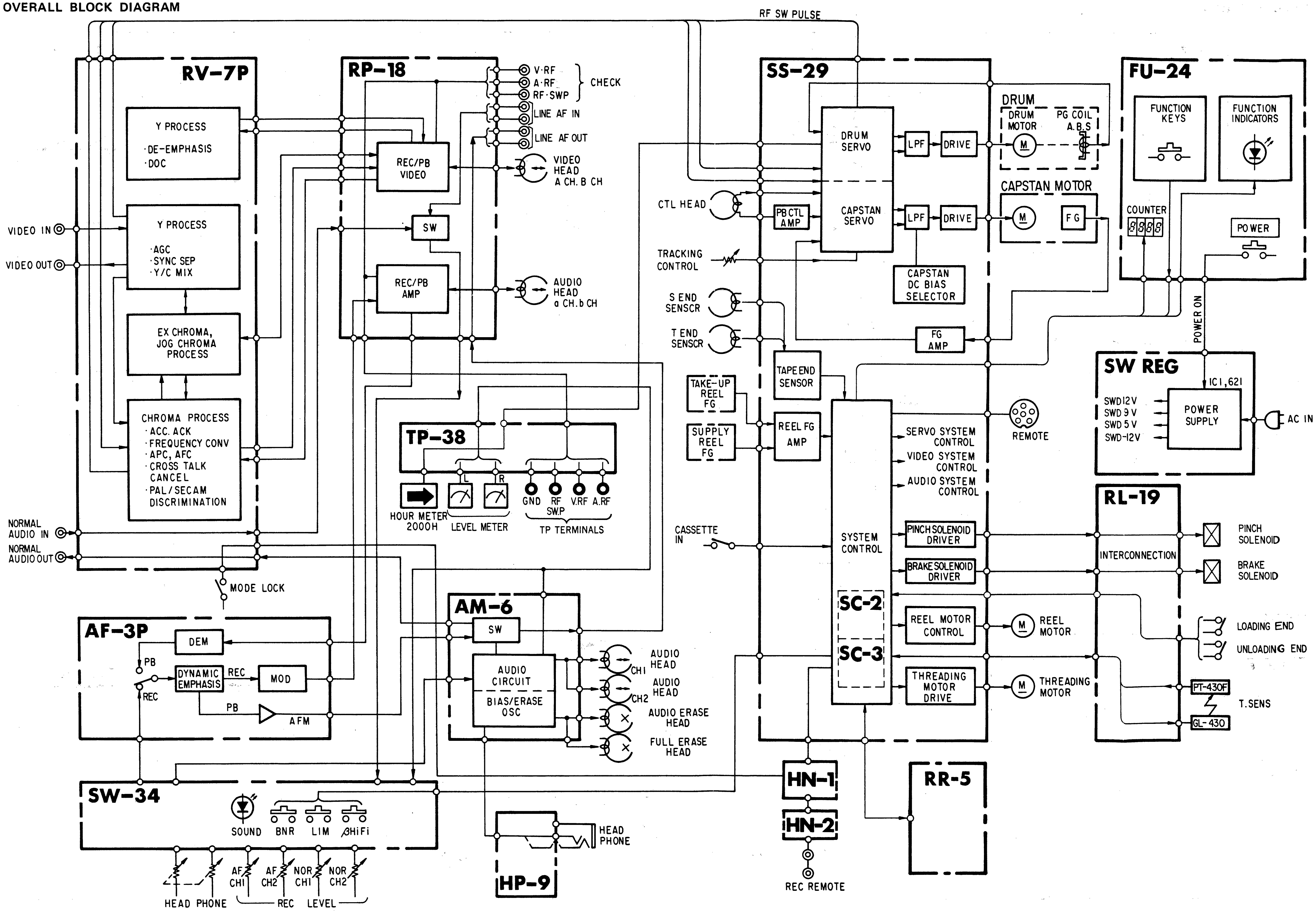
SECTION 3
BLOCK DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

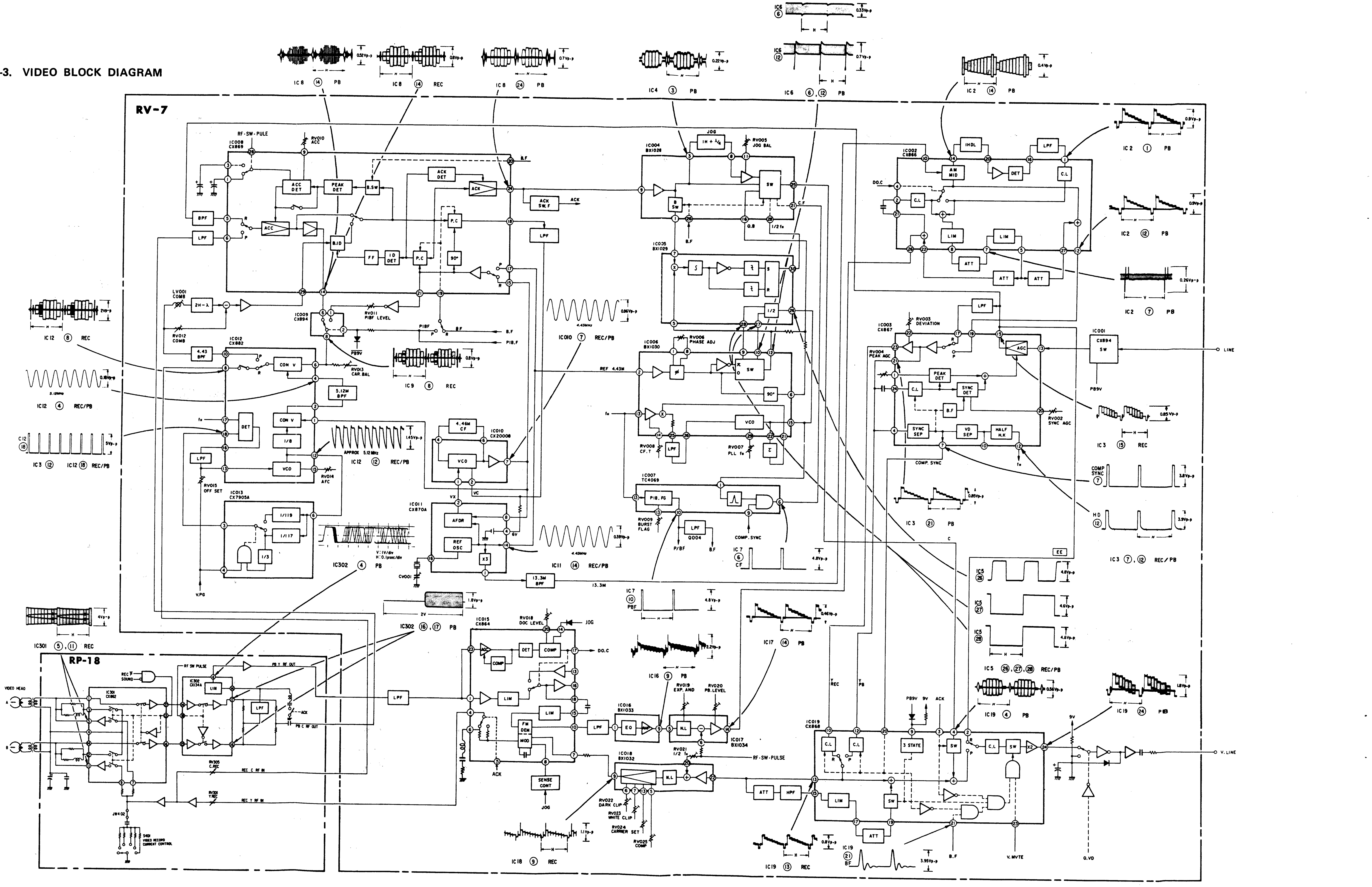

F
RL-19
REW sensor
Capstan motor
D
FWD sensor
Reel motor
RP-18
FU-24
AM-6
TP-38
SW-34


LM-8
M
C
SC-2
SC-3
HN-1
HN-2
SS-29
AF-3P
RR-5
RV-7P
HP-9

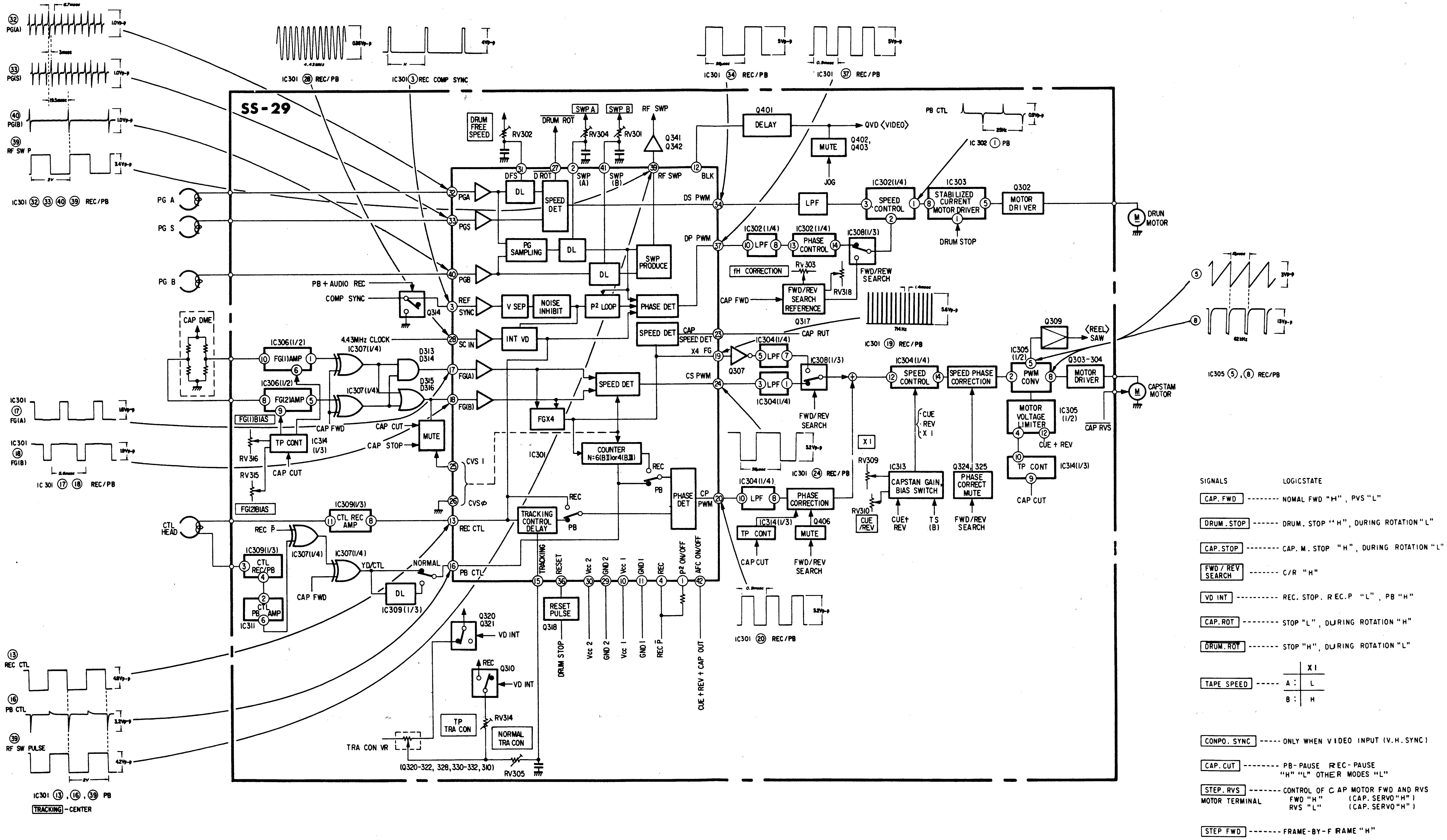
3-2. OVERALL BLOCK DIAGRAM


RF SW PULSE
RV-7P
Y PROCESS
·DE-EMPHASIS
·DOC
Y PROCESS
·AGC
·SYNC SEP
·Y/C MIX
EX CHROMA, JOG CHROMA PROCESS
CHROMA PROCESS
·ACC, ACK
·FREQUENCY CONV
·APC, AFC
·CROSS TALK CANCEL
·PAL/SECAM DISCRIMINATION
VIDEO IN
VIDEO OUT
NORMAL AUDIO IN
NORMAL AUDIO OUT
MODE LOCK
RP-18
V·RF
A·RF
RF·SWP
CHECK
LINE AF IN
LINE AF OUT
REC/PB VIDEO
SW
REC/PB AMP
VIDEO HEAD A CH. B CH
AUDIO HEAD a CH. b CH
TP-38
L
R
HOUR METER 2000H
LEVEL METER
GND
RF SW.P
V.RF
A.RF
TP TERMINALS
AF-3P
DEM
PB
REC
DYNAMIC EMPHASIS
MOD
AFM
AM-6
SW
AUDIO CIRCUIT
BIAS/ERASE OSC
CH1
CH2
AUDIO HEAD
AUDIO HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
SW-34
SOUND
BNR
LIM
βHiFi
AF CH1
AF CH2
NOR CH1
NOR CH2
HEAD PHONE
REC LEVEL
HP-9
HEAD PHONE
CTL HEAD
TRACKING CONTROL
S END SENSCR
T END SENSCR
TAKE-UP REEL FG
SUPPLY REEL FG
CASSETTE IN
SS-29
DRUM SERVO
CAPSTAN SERVO
PB CTL AMP
LPF
DRIVE
LPF
DRIVE
CAPSTAN DC BIAS SELECTOR
FG AMP
TAPE END SENSOR
REEL FG AMP
SYSTEM CONTROL
SC-2
SC-3
SERVO SYSTEM CONTROL
VIDEO SYSTEM CONTROL
AUDIO SYSTEM CONTROL
PINCH SOLENOID DRIVER
BRAKE SOLENOID DRIVER
REEL MOTOR CONTROL
THREADING MOTOR DRIVE
DRUM
DRUM MOTOR
PG COIL A.B.S
M
CAPSTAN MOTOR
FG
REMOTE
REEL MOTOR
THREADING MOTOR
HN-1
HN-2
REC REMOTE
RR-5
FU-24
FUNCTION KEYS
FUNCTION INDICATORS
COUNTER
POWER
POWER ON
SW REG
IC1,621
SWD12V
SWD 9 V
SWD 5 V
SWD-12V
POWER SUPPLY
AC IN
RL-19
INTERCONNECTION
PINCH SOLENOID
BRAKE SOLENOID
LOADING END
UNLOADING END
PT-430F
GL-430
T.SENS

3-3. VIDEO BLOCK DIAGRAM

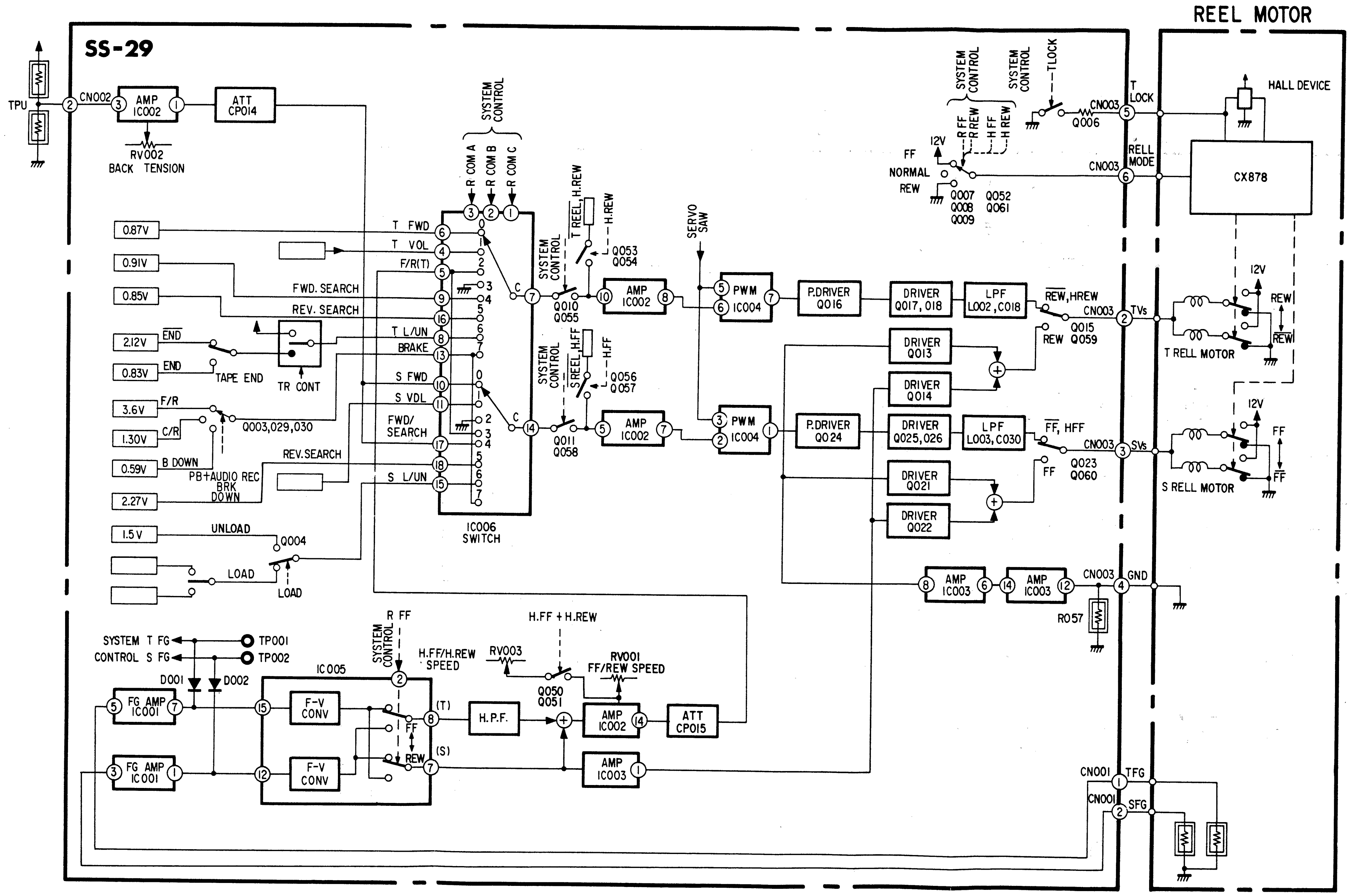

RV-7
RP-18
IC008 CX869
IC009 CX894
IC010 CX20008
IC011 CX870A
IC012 CX882
IC013 CX7905A
IC015 CX864
IC016 BX1033
IC017 BX1034
IC018 BX1032
IC019 CX868
IC001 CX894
IC002 CX866
IC003 CX867
IC004 BX1028
IC005 BX1029
IC006 BX1030
IC007 TC4069
IC301 CX862
IC302 CX134A
RF-SW-PULE
RV010 ACC
RV011 PIBF LEVEL
RV012 COMB
RV013 CAR.BAL
RV014 AFC
RV015 OFF SET
LV001 COMB
RV005 JOG BAL
RV006 PHASE ADJ
RV007 PLL fH
RV008 CF.T
RV009 BURST FLAG
RV003 DEVIATION
RV004 PEAK AGC
RV002 SYNC AGC
RV018 DOC LEVEL
RV019 EXP. AND
RV020 PB.LEVEL
RV021 1/2 fH
RV022 DARK CLIP
RV023 WHITE CLIP
RV024 CARRIER SET
RV025 COMP
RV305 C.REC
RV301 Y.REC
ACC DET
PEAK DET
B.SW
ACK DET
ACK
ACK SW.F
BPF
LPF
B.ID
FF
ID DET
P.C
90°
2H-λ
4.43 BPF
CON V
5.12M BPF
DET
1/8
VCO
1/119
1/117
1/3
4.46M CF
AFDR
REF OSC
X3
CV001
13.3M BPF
13.3M
REF 4.43M
1H + λ/4
JOG
SW
B SW
PIB. FG
COMP. SYNC
P/BF
B.F
PIB.F
PB9V
IHDL
AM MID
C.L
LIM
ATT
AGC
PEAK DET
SYNC DET
SYNC SEP
VD SEP
HALF H.K
EE
LINE
DO.C
COMP
FM DEM
MOD
SENSE CONT
EQ
N.L
HPF
3 STATE
X2
V.LINE
V. MUTE
O.VD
PB9V 9V ACK
Y REC
Y PB
VIDEO HEAD
A
B
REC SOUND
RF SW PULSE
PB Y RF OUT
PB C RF OUT
REC C RF IN
REC Y RF IN
JW402
S401 VIDEO RECORD CURRENT CONTROL
IC 8 ⑭ PB
IC 8 ⑭ REC
IC 8 ㉔ PB
IC4 ③ PB
IC6 ⑥ ⑫ PB
IC2 ⑭ PB
IC2 ① PB
IC2 ⑫ PB
IC2 ⑦ PB
IC12 ⑧ REC
IC12 ④ REC/PB
IC3 ⑫ IC12 ⑱ REC/PB
IC9 ⑧ REC
IC12 ⑫ REC/PB
APPROX 5.12 MHz
IC010 ⑦ REC/PB
IC11 ⑭ REC/PB
IC302 ④ PB
V: 1V/div H: 0.1μsec/div
IC302 ⑯, ⑰ PB
IC301 ⑤, ⑪ REC
IC3 ⑮ REC
IC3 ㉑ PB
IC3 ⑦, ⑫ REC/PB
COMP SYNC ⑦
HD ⑫
IC7 ⑥ CF
IC7 ⑩ PBF
IC17 ⑭ PB
IC16 ⑨ PB
IC5 ㉖, ㉗, ㉘ REC/PB
IC19 ④ PB
IC19 ㉔ PB
IC18 ⑨ REC
IC19 ⑬ REC
IC 19 ㉑ BF

3-4. SERVO BLOCK DIAGRAM (DRUM/CAPSTAN)

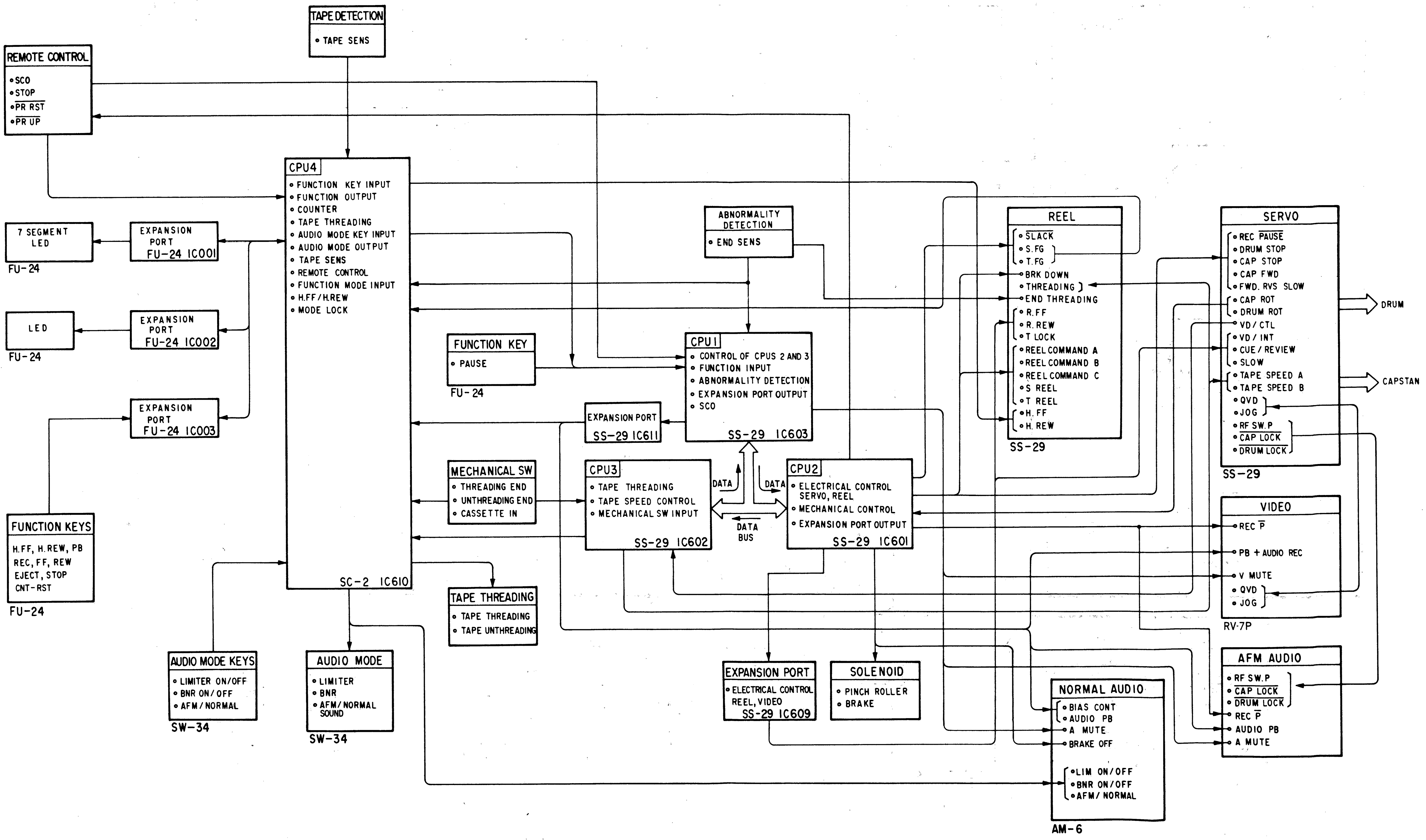

(32) PG(A)
6.7msec
1.0Vp-p
(33) PG(S)
3msec
1.0Vp-p
19.5msec
(40) PG(B)
1.0Vp-p
(39) RF SW P
3.4Vp-p
2V
IC301 (32) (33) (40) (39) REC/PB
PG A
PG S
PG B
CAP DME
IC301 (17) FG(A)
1.6Vp-p
IC301 (18) FG(B)
1.9Vp-p
5.6msec
IC 301 (17) (18) REC/PB
CTL HEAD
(13) REC CTL
4.8Vp-p
(16) PB CTL
3.2Vp-p
(39) RF SW PULSE
4.2Vp-p
2V
IC301 (13), (16), (39) PB
TRACKING - CENTER
4.43MHz
0.36Vp-p
IC301 (28) REC/PB
4Vp-p
H
IC301 (3) REC COMP SYNC
SS-29
DRUM FREE SPEED
RV302
DRUM ROT
SWP A
SWP B
RV304
RV301
RF SWP
Q341
Q342
DFS
D ROT
SWP (A)
SWP (B)
RF SWP
BLK
PGA
PGS
PGB
DL
SPEED DET
PG SAMPLING
DL
DL
SWP PRODUCE
PB + AUDIO REC
COMP SYNC
Q314
REF SYNC
V SEP
NOISE INHIBIT
P² LOOP
PHASE DET
4.43MHz CLOCK
SC IN
INT VD
SPEED DET
CAP SPEED DET
X4 FG
IC306(1/2)
FG(1)AMP
IC307(1/4)
D313
D314
FG(A)
IC306(1/2)
FG(2)AMP
IC307(1/4)
D315
D316
FG(B)
SPEED DET
CS PWM
FG(1)BIAS
CAP FWD
CAP CUT
MUTE
FGX4
TP CONT
IC314 (1/3)
CAP STOP
RV316
RV315
CAP CUT
CVS I
IC301
COUNTER N=6(BII)or4(BIII)
REC
PB
PHASE DET
CP PWM
FG(2)BIAS
CVSφ
REC
IC309(1/3)
CTL REC AMP
REC CTL
TRACKING CONTROL DELAY
PB
REC P̄
IC309(1/3)
CTL REC/PB
IC307(1/4)
IC307(1/4)
YD/CTL
NORMAL
PB CTL
CTL PB AMP
IC311
CAP FWD
DL
IC309(1/3)
TRACKING
RESET
Vcc 2
GND 2
Vcc 1
GND 1
REC
P² ON/OFF
AFC ON/OFF
RESET PULSE
Q318
DRUM STOP
Vcc 2
GND 2
Vcc 1
GND 1
REC P̄
CUE + REV + CAP OUT
Q320
Q321
VD INT
REC
Q310
VD INT
TP TRA CON
RV314
NORMAL TRA CON
TRA CON VR
(Q320-322, 328, 330-332, 310)
RV305
5Vp-p
50μsec
IC301 (34) REC/PB
5Vp-p
0.9msec
IC301 (37) REC/PB
Q401
DELAY
QVD ⟨VIDEO⟩
MUTE
Q402, Q403
JOG
PB CTL
0.9Vp-p
25Hz
IC 302 (1) PB
DS PWM
LPF
IC302(1/4)
SPEED CONTROL
IC303
STABILIZED CURRENT MOTOR DRIVER
Q302
MOTOR DRIVER
DRUN MOTOR
DRUM STOP
DP PWM
IC302(1/4)
LPF
IC302(1/4)
PHASE CONTROL
IC308(1/3)
FWD/REW SEARCH
fH CORRECTION
Rv303
FWD/REV SEARCH REFERENCE
RV318
CAP FWD
1.4msec
5.6Vp-p
714Hz
IC301 (19) REC/PB
Q317
CAP RUT
IC304(1/4)
LPF
Q307
IC308(1/3)
LPF
IC304(1/4)
FWD/REV SEARCH
IC304(1/4)
SPEED CONTROL
SPEED PHASE CORRECTION
Q309
⟨REEL⟩ SAW
IC305 (1/2)
PWM CONV
Q303-304
MOTOR DRIVER
CAPSTAM MOTOR
CAP RVS
CUE
REV
X I
MOTOR VOLTAGE LIMITER
IC305 (1/2)
CUE + REV
TP CONT
IC314(1/3)
CAP CUT
X I
5.2Vp-p
50μsec
IC301 (24) REC/PB
RV309
IC313
CAPSTAN GAIN, BIAS SWITCH
Q324, 325
PHASE CORRECT MUTE
IC304(1/4)
LPF
PHASE CORRECTION
RV310
CUE /REV
CUE† REV
TS (B)
FWD/REV SEARCH
IC314(1/3)
Q406
TP CONT
MUTE
CAP CUT
FWD/REV SEARCH
0.9msec
5.2Vp-p
IC301 (20) REC/PB
(5)
3Vp-p
(8)
13Vp-p
62kHz
IC305 (5), (8) REC/PB

SIGNALS	LOGICSTATE
CAP. FWD	NOMAL FWD "H", PVS "L"
DRUM. STOP	DRUM. STOP "H", DURING ROTATION "L"
CAP. STOP	CAP. M. STOP "H", DURING ROTATION "L"
FWD / REV SEARCH	C/R "H"
VD INT	REC. STOP. REC.P "L", PB "H"
CAP. ROT	STOP "L", DURING ROTATION "H"
DRUM. ROT	STOP "H", DURING ROTATION "L"
TAPE SPEED	X I A : L B : H
CONPO. SYNC	ONLY WHEN VIDEO INPUT (V.H. SYNC)
CAP. CUT	PB-PAUSE REC-PAUSE "H" "L" OTHER MODES "L"
STEP. RVS MOTOR TERMINAL	CONTROL OF CAP MOTOR FWD AND RVS FWD "H" (CAP. SERVO "H") RVS "L" (CAP. SERVO "H")
STEP FWD	FRAME-BY-FRAME "H"

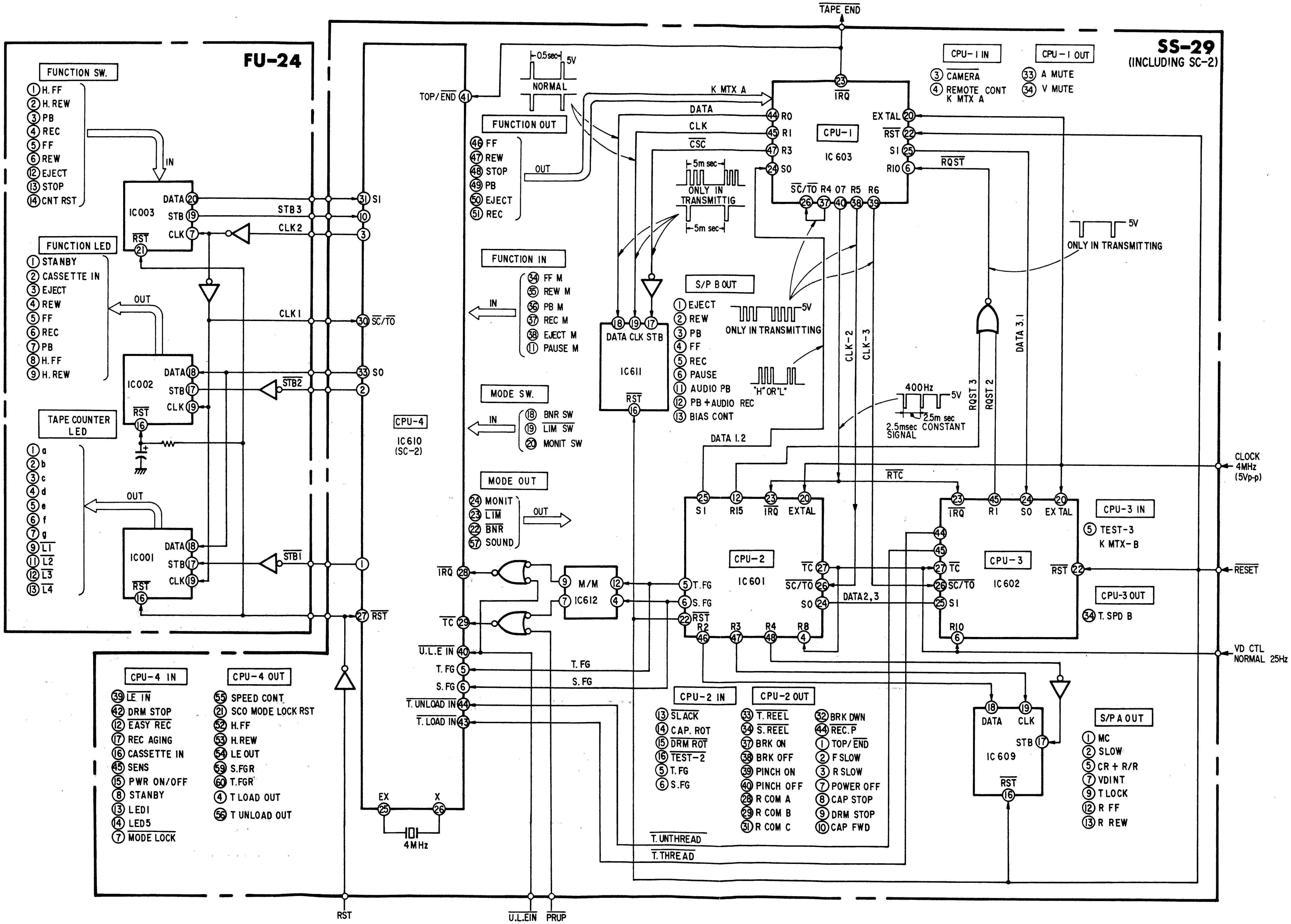
3-5. SERVO BLOCK DIAGRAM (REEL)


SS-29
REEL MOTOR
TPU
CN002
AMP IC002
ATT CP014
RV002
BACK TENSION
SYSTEM CONTROL
R COM A
R COM B
R COM C
0.87V
0.91V
0.85V
2.12V
0.83V
3.6V
1.30V
0.59V
2.27V
1.5V
T FWD
T VOL
F/R(T)
FWD. SEARCH
REV. SEARCH
T L/UN
BRAKE
S FWD
S VOL
FWD/SEARCH
REV.SEARCH
S L/UN
END
TAPE END
TR CONT
F/R
C/R
Q003,029,030
B DOWN
PB+AUDIO REC BRK DOWN
UNLOAD
Q004
LOAD
IC006 SWITCH
T REEL, H.REW
H.REW
Q053
Q054
Q010
Q055
S REEL, H.FF
H.FF
Q056
Q057
Q011
Q058
AMP IC002
SERVO SAW
PWM IC004
P.DRIVER Q016
DRIVER Q017, 018
LPF L002, C018
DRIVER Q013
DRIVER Q014
P.DRIVER Q024
DRIVER Q025,026
LPF L003, C030
DRIVER Q021
DRIVER Q022
REW, HREW
REW
Q015
Q059
FF, HFF
FF
Q023
Q060
CN003
TVs
SVs
GND
AMP IC003
R057
R FF
R REW
H FF
H REW
12V
FF
NORMAL
REW
Q007
Q008
Q009
Q052
Q061
T LOCK
Q006
RELL MODE
HALL DEVICE
CX878
T RELL MOTOR
S RELL MOTOR
SYSTEM T FG
CONTROL S FG
TP001
TP002
D001
D002
FG AMP IC001
IC005
F-V CONV
(T)
(S)
H.FF/H.REW SPEED
RV003
H.FF + H.REW
Q050
Q051
RV001
FF/REW SPEED
H.P.F.
ATT CP015
CN001
TFG
SFG

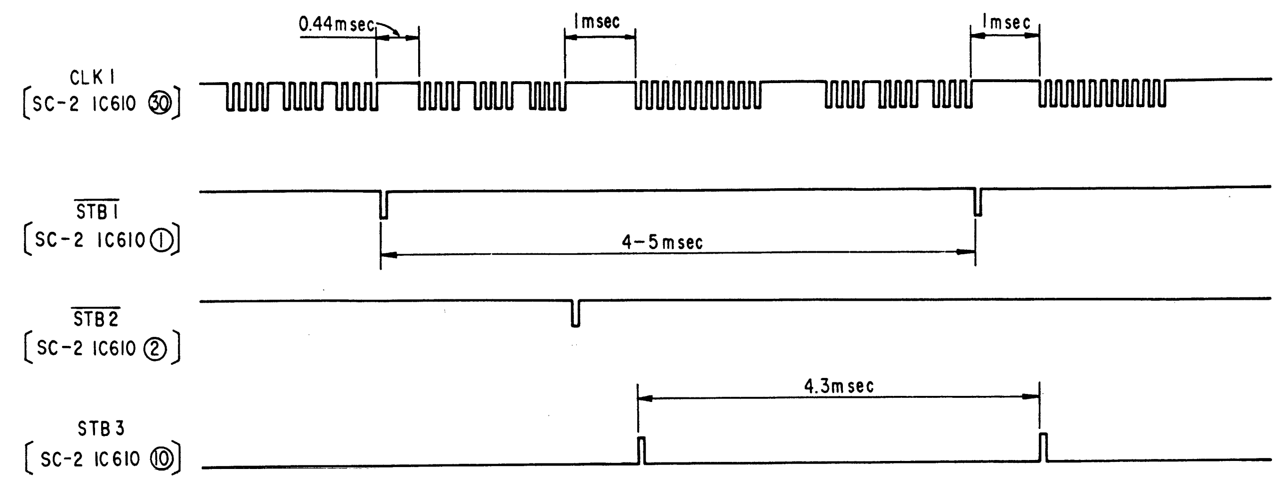
3-6. SYSTEM CONTROL BLOCK DIAGRAM (1)


TAPE DETECTION
• TAPE SENS
REMOTE CONTROL
• SCO
• STOP
• PR RST
• PR UP
CPU4
• FUNCTION KEY INPUT
• FUNCTION OUTPUT
• COUNTER
• TAPE THREADING
• AUDIO MODE KEY INPUT
• AUDIO MODE OUTPUT
• TAPE SENS
• REMOTE CONTROL
• FUNCTION MODE INPUT
• H.FF/H.REW
• MODE LOCK
SC-2 IC610
7 SEGMENT LED
FU-24
EXPANSION PORT FU-24 IC001
LED
FU-24
EXPANSION PORT FU-24 IC002
EXPANSION PORT FU-24 IC003
FUNCTION KEYS
H.FF, H.REW, PB
REC, FF, REW
EJECT, STOP
CNT-RST
FU-24
AUDIO MODE KEYS
• LIMITER ON/OFF
• BNR ON/OFF
• AFM/NORMAL
SW-34
AUDIO MODE
• LIMITER
• BNR
• AFM/NORMAL SOUND
SW-34
TAPE THREADING
• TAPE THREADING
• TAPE UNTHREADING
MECHANICAL SW
• THREADING END
• UNTHREADING END
• CASSETTE IN
FUNCTION KEY
• PAUSE
FU-24
EXPANSION PORT SS-29 IC611
ABNORMALITY DETECTION
• END SENS
CPU1
• CONTROL OF CPUS 2 AND 3
• FUNCTION INPUT
• ABNORMALITY DETECTION
• EXPANSION PORT OUTPUT
• SCO
SS-29 IC603
CPU3
• TAPE THREADING
• TAPE SPEED CONTROL
• MECHANICAL SW INPUT
SS-29 IC602
DATA
DATA
DATA BUS
CPU2
• ELECTRICAL CONTROL SERVO, REEL
• MECHANICAL CONTROL
• EXPANSION PORT OUTPUT
SS-29 IC601
EXPANSION PORT
• ELECTRICAL CONTROL REEL, VIDEO
SS-29 IC609
SOLENOID
• PINCH ROLLER
• BRAKE
REEL
• SLACK
• S.FG
• T.FG
• BRK DOWN
• THREADING
• END THREADING
• R.FF
• R.REW
• T LOCK
• REEL COMMAND A
• REEL COMMAND B
• REEL COMMAND C
• S REEL
• T REEL
• H.FF
• H.REW
SS-29
SERVO
• REC PAUSE
• DRUM STOP
• CAP STOP
• CAP FWD
• FWD. RVS SLOW
• CAP ROT
• DRUM ROT
• VD/CTL
• VD/INT
• CUE/REVIEW
• SLOW
• TAPE SPEED A
• TAPE SPEED B
• QVD
• JOG
• RF SW.P
• CAP LOCK
• DRUM LOCK
SS-29
DRUM
CAPSTAN
VIDEO
• REC P
• PB + AUDIO REC
• V MUTE
• QVD
• JOG
RV-7P
AFM AUDIO
• RF SW.P
• CAP LOCK
• DRUM LOCK
• REC P
• AUDIO PB
• A MUTE
NORMAL AUDIO
• BIAS CONT
• AUDIO PB
• A MUTE
• BRAKE OFF
• LIM ON/OFF
• BNR ON/OFF
• AFM/NORMAL
AM-6

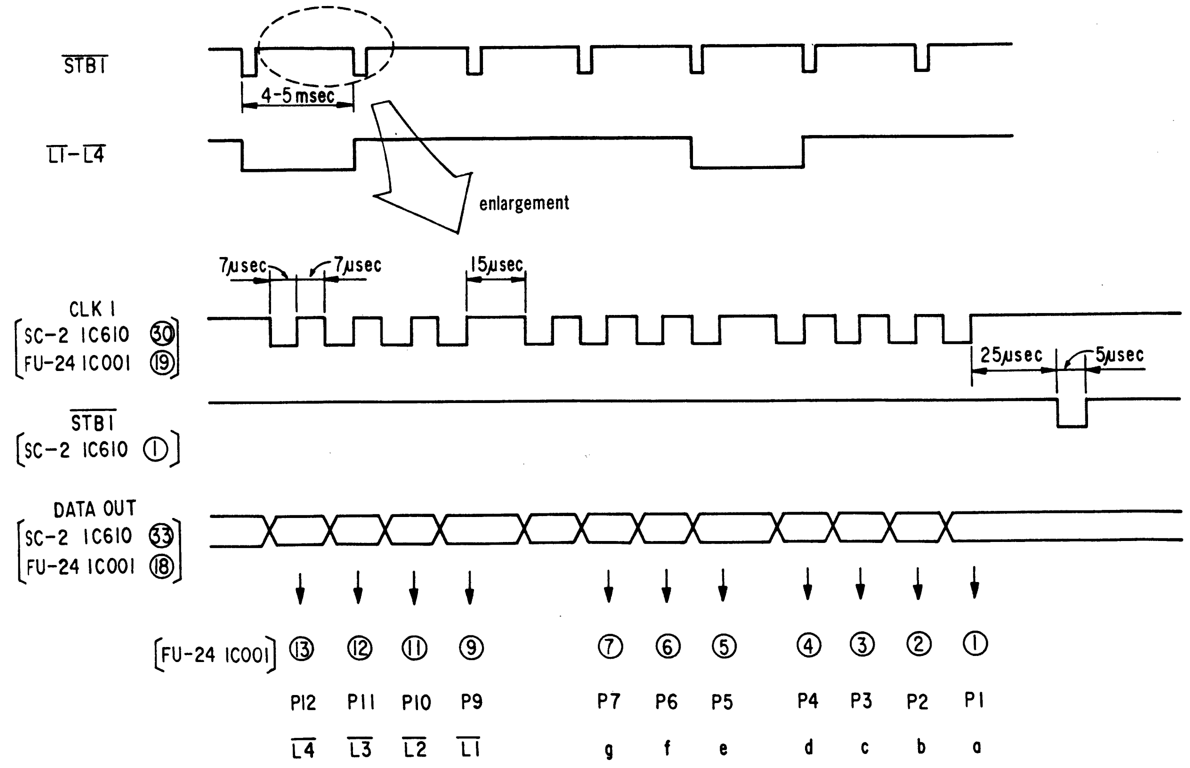
3-7. SYSTEM CONTROL BLOCK DIAGRAM (2)


FU-24
SS-29
(INCLUDING SC-2)
FUNCTION SW.
① H.FF
② H.REW
③ PB
④ REC
⑤ FF
⑥ REW
⑫ EJECT
⑬ STOP
⑭ CNT RST
FUNCTION LED
① STANBY
② CASSETTE IN
③ EJECT
④ REW
⑤ FF
⑥ REC
⑦ PB
⑧ H.FF
⑨ H.REW
TAPE COUNTER LED
① a
② b
③ c
④ d
⑤ e
⑥ f
⑦ g
⑨ L1
⑪ L2
⑫ L3
⑬ L4
IC003
IC002
IC001
DATA
STB
CLK
RST
IN
OUT
STB3
CLK2
CLK1
STB2
STB1
SI
SC/TO
SO
RST
CPU-4
IC610
(SC-2)
TOP/END
FUNCTION OUT
㊻ FF
㊼ REW
㊽ STOP
㊾ PB
(50) EJECT
(51) REC
FUNCTION IN
㉞ FF M
㉟ REW M
㊱ PB M
㊲ REC M
㊳ EJECT M
⑪ PAUSE M
MODE SW.
⑱ BNR SW
⑲ LIM SW
⑳ MONIT SW
MODE OUT
㉔ MONIT
㉓ LIM
㉒ BNR
(57) SOUND
OUT
IRQ
TC
U.L.E IN
T.FG
S.FG
T.UNLOAD IN
T.LOAD IN
EX
X
4MHz
0.5sec
5V
NORMAL
K MTX A
DATA
CLK
CSC
5m sec
ONLY IN TRANSMITTIG
5m sec
IC611
DATA CLK STB
RST
S/P B OUT
① EJECT
② REW
③ PB
④ FF
⑤ REC
⑥ PAUSE
⑪ AUDIO PB
⑫ PB + AUDIO REC
⑬ BIAS CONT
ONLY IN TRANSMITTING
"H" OR "L"
DATA 1.2
TAPE END
CPU-1
IC 603
IRQ
R0
R1
R3
S0
EX TAL
RST
SI
RIO
SC/TO R4 07 R5 R6
RQST
CPU-1 IN
③ CAMERA
④ REMOTE CONT
K MTX A
CPU-1 OUT
㉝ A MUTE
㉞ V MUTE
5V
ONLY IN TRANSMITTING
CLK-2
CLK-3
DATA 3.1
RQST 3
RQST 2
400Hz
2.5m sec
2.5msec CONSTANT SIGNAL
CLOCK
4MHz
(5Vp-p)
RTC
CPU-2
IC601
SI
R15
IRQ
EXTAL
T.FG
S.FG
RST
R2
R3
R4
R8
TC
SC/TO
SO
DATA2,3
M/M
IC612
CPU-3
IC602
IRQ
RI
SO
EX TAL
TC
SC/TO
SI
RIO
RST
CPU-3 IN
⑤ TEST-3
K MTX-B
CPU-3 OUT
㉞ T.SPD B
RESET
VD CTL
NORMAL 25Hz
IC 609
DATA
CLK
STB
RST
S/P A OUT
① MC
② SLOW
⑤ CR + R/R
⑦ VDINT
⑨ TLOCK
⑫ R FF
⑬ R REW
CPU-4 IN
㊴ LE IN
㊷ DRM STOP
⑫ EASY REC
⑰ REC AGING
⑯ CASSETTE IN
㊺ SENS
⑮ PWR ON/OFF
⑧ STANBY
⑬ LED1
⑭ LED5
⑦ MODE LOCK
CPU-4 OUT
(55) SPEED CONT
㉑ SCO MODE LOCK RST
(52) H.FF
(53) H.REW
(54) LE OUT
(59) S.FGR
(60) T.FGR
④ T LOAD OUT
(56) T UNLOAD OUT
CPU-2 IN
⑬ SLACK
⑭ CAP. ROT
⑮ DRM ROT
⑯ TEST-2
⑤ T.FG
⑥ S.FG
CPU-2 OUT
㉝ T.REEL
㉞ S.REEL
㊲ BRK ON
㊳ BRK OFF
㊴ PINCH ON
㊵ PINCH OFF
㉘ R COM A
㉙ R COM B
㉛ R COM C
㉜ BRK DWN
㊹ REC.P
① TOP/END
② F SLOW
③ R SLOW
⑦ POWER OFF
⑧ CAP STOP
⑨ DRM STOP
⑩ CAP FWD
T.UNTHREAD
T.THREAD
RST
U.L.EIN
PRUP

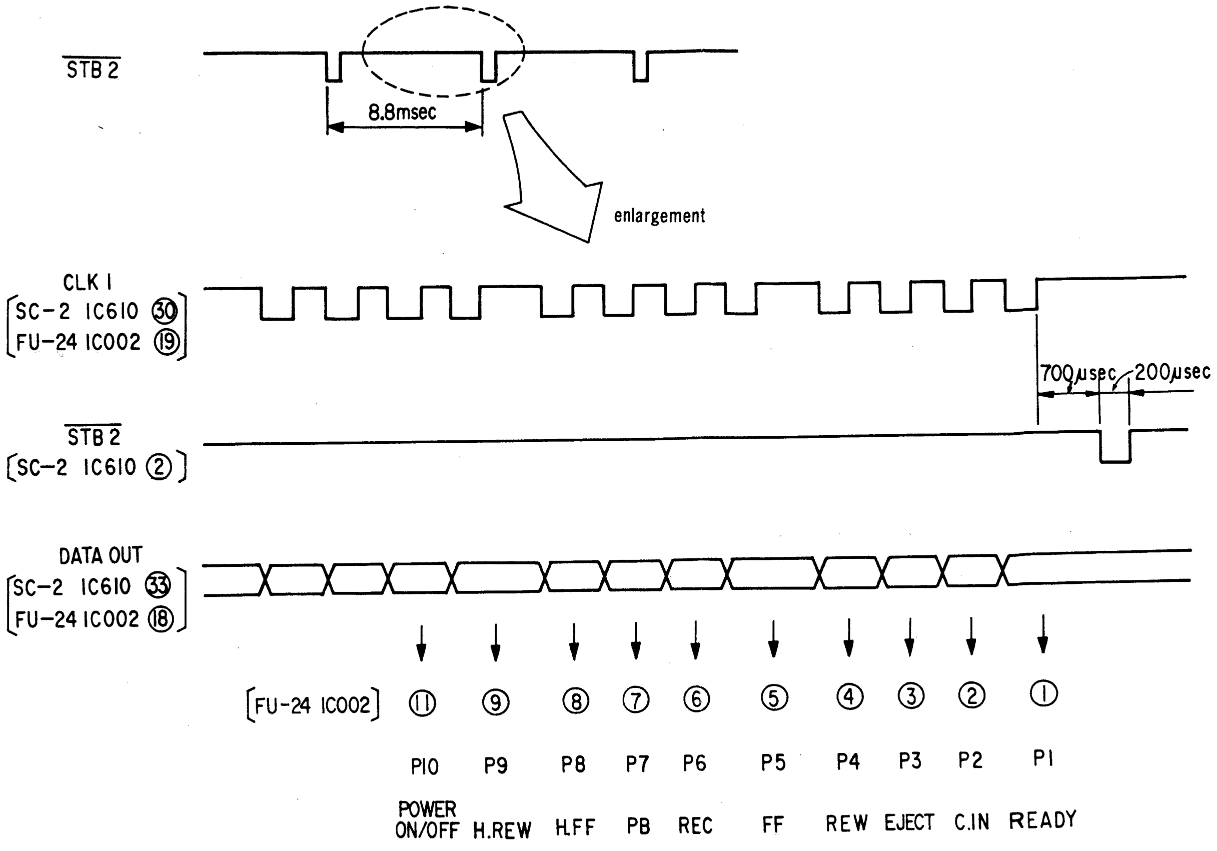
3-8. SS-29 BOARD – FU-24 BOARD SERIAL SIGNAL TIMING CHART


0.44msec
Imsec
Imsec
CLK I
[SC-2 IC610 ㉚]
STB1
[SC-2 IC610 ①]
4–5msec
STB2
[SC-2 IC610 ②]
4.3msec
STB3
[SC-2 IC610 ⑩]

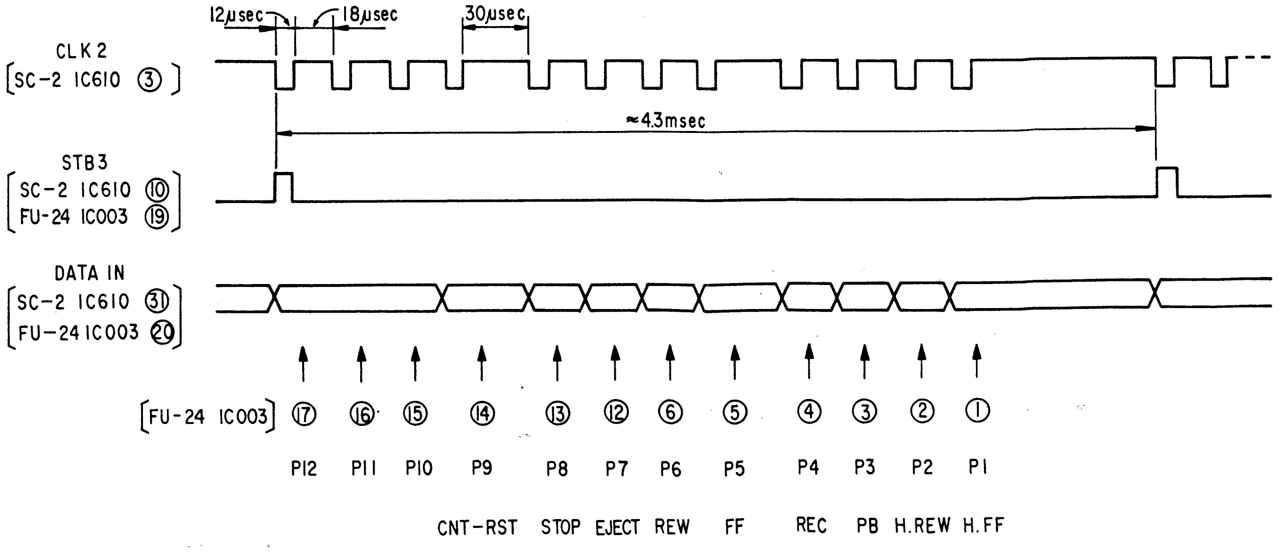
3-9. SEGMENTS TAPE COUNTER LED CONTROL TIMING CHART


STB1
L1–L4
4–5msec
enlargement
7μsec
7μsec
15μsec
CLK I
[SC-2 IC610 ㉚
FU-24 IC001 ⑲]
25μsec
5μsec
STB1
[SC-2 IC610 ①]
DATA OUT
[SC-2 IC610 ㉝
FU-24 IC001 ⑱]
[FU-24 IC001] ⑬ ⑫ ⑪ ⑨ ⑦ ⑥ ⑤ ④ ③ ② ①
P12 P11 P10 P9 P7 P6 P5 P4 P3 P2 P1
L4 L3 L2 L1 g f e d c b a

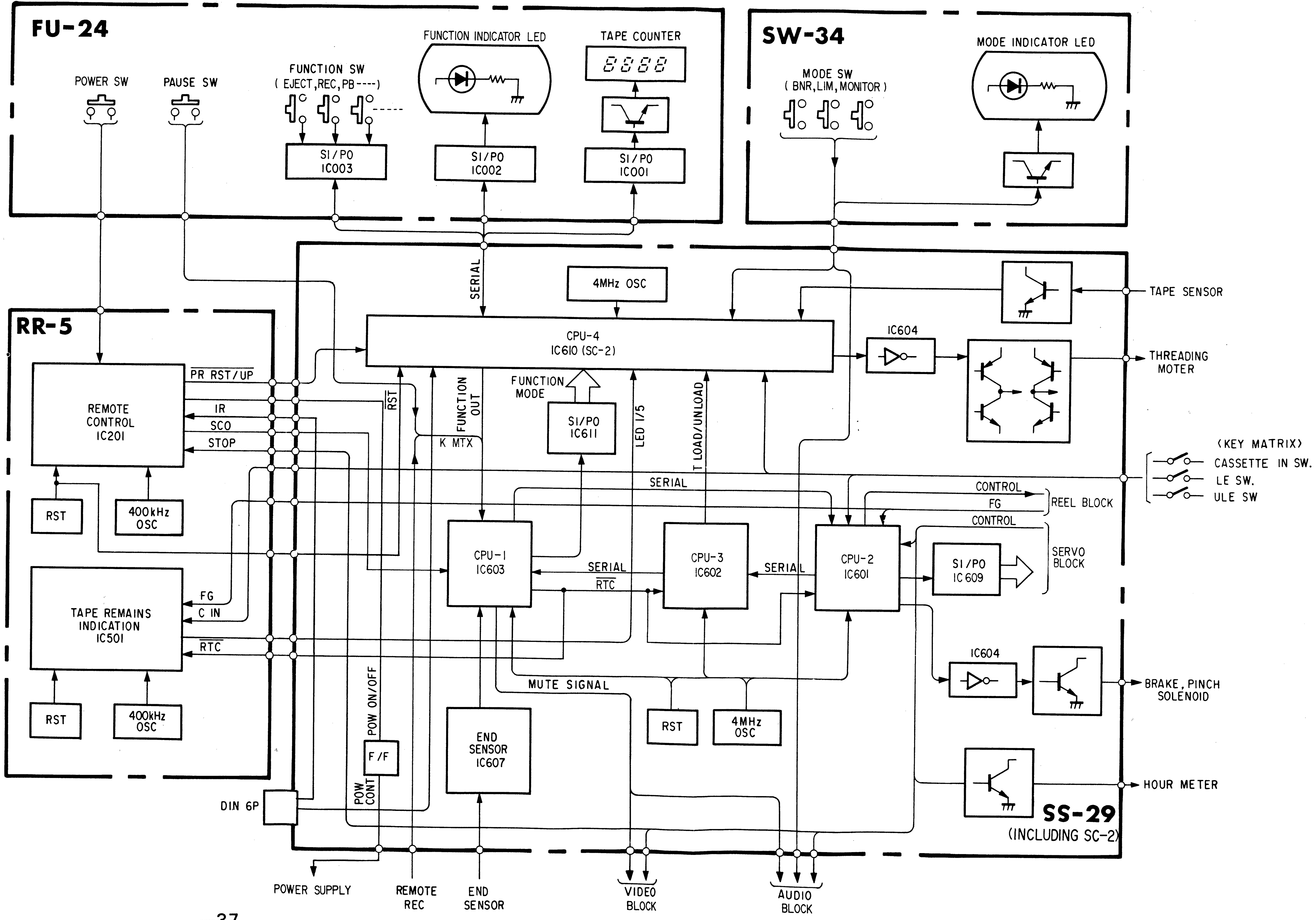
3-10. FUNCTION INDICATOR LED CONTROL TIMING CHART


STB2
8.8msec
enlargement
CLK I
[SC-2 IC610 ㉚
FU-24 IC002 ⑲]
700μsec
200μsec
STB2
[SC-2 IC610 ②]
DATA OUT
[SC-2 IC610 ㉝
FU-24 IC002 ⑱]
[FU-24 IC002] ⑪ ⑨ ⑧ ⑦ ⑥ ⑤ ④ ③ ② ①
P10 P9 P8 P7 P6 P5 P4 P3 P2 P1
POWER ON/OFF H.REW H.FF PB REC FF REW EJECT C.IN READY

3-11. FUNCTION SWITCH READ TIMING CHART


12μsec
18μsec
30μsec
CLK 2
[SC-2 IC610 ③]
≈4.3msec
STB3
[SC-2 IC610 ⑩
FU-24 IC003 ⑲]
DATA IN
[SC-2 IC610 ㉛
FU-24 IC003 ⑳]
[FU-24 IC003] ⑰ ⑯ ⑮ ⑭ ⑬ ⑫ ⑥ ⑤ ④ ③ ② ①
P12 P11 P10 P9 P8 P7 P6 P5 P4 P3 P2 P1
CNT-RST STOP EJECT REW FF REC PB H.REW H.FF

3-12. SYSTEM CONTROL BLOCK DIAGRAM (3)


FU-24
POWER SW
PAUSE SW
FUNCTION SW
(EJECT, REC, PB----)
FUNCTION INDICATOR LED
TAPE COUNTER
SI/PO IC003
SI/PO IC002
SI/PO IC001
SW-34
MODE SW
(BNR, LIM, MONITOR)
MODE INDICATOR LED
RR-5
REMOTE CONTROL IC201
PR RST/UP
IR
SCO
STOP
RST
400kHz OSC
TAPE REMAINS INDICATION IC501
FG
C IN
RTC
RST
400kHz OSC
SERIAL
4MHz OSC
CPU-4 IC610 (SC-2)
RST
FUNCTION OUT
K MTX
FUNCTION MODE
SI/PO IC611
LED 1/5
T LOAD/UNLOAD
IC604
TAPE SENSOR
THREADING MOTER
(KEY MATRIX)
CASSETTE IN SW.
LE SW.
ULE SW
SERIAL
CONTROL
FG
REEL BLOCK
CONTROL
CPU-1 IC603
SERIAL
RTC
CPU-3 IC602
SERIAL
CPU-2 IC601
SI/PO IC 609
SERVO BLOCK
IC604
BRAKE, PINCH SOLENOID
MUTE SIGNAL
RST
4MHz OSC
END SENSOR IC607
POW ON/OFF
F/F
POW CONT
HOUR METER
SS-29
(INCLUDING SC-2)
DIN 6P
POWER SUPPLY
REMOTE REC
END SENSOR
VIDEO BLOCK
AUDIO BLOCK

3-13. SYSTEM CONTROL CIRCUIT AND REEL MOTOR CIRCUIT INTERFACE

SIGNAL	MODE I/O	Pin No.	STOP	PB	REC	FF	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
T FG	I	CPU2 5 Pin (R9)	—	←	—	—	—	—	*1	—	—	—	→
S FG	I	CPU2 6 Pin (R10)	—	←	—	—	—	—	*1	—	—	—	→
$\overline{\text{SLACK}}$	I	CPU2 13 Pin (K0)	—	—	—	"H" NORMALITY "L" ABNORMALITY	"H" NORMALITY "L" ABNORMALITY	—	—	—	—	—	—
BRK DOWN*2	O	CPU2 32 Pin (P3)	L	L	L	L	L	L	L	L	L	L	L
T LOCK	O	IC609 (CX7991) 9 Pin (P9)	L	L	L	L	L	L	L	L	L	H	H
R FF	O	IC609 (CX7991) 12 Pin (P11)	L	L	L	H	L	L	L	L	L	L	L
R REW	O	IC609 (CX7991) 13 Pin (P12)	L	L	L	L	H	L	L	L	L	L	L
R COM A	O	CPU2 28 Pin (P0)	*3	L	L	L	H	L	H	L*4	L*5	L	L
R COM B	O	CPU2 29 Pin (P1)	*3	L	L	H	H	L	L	L	L	H	H
R COM C	O	CPU2 31 Pin (P2)	*3	L	L	L	L	H	H	L	L*5	H	H
$\overline{\text{T REEL}}$	O	CPU2 33 Pin (O0)	H	L	L	L	H	L	L	L	L	L	L
$\overline{\text{S REEL}}$	O	CPU2 34 Pin (O1)	H	L	L	H	L	L	L	L	L	L	L
$\overline{\text{T THREAD}}$	O	CPU3 44 Pin (R0)	H	H	H	H	H	H	H	H	H	L	H

*1: numbers of pulse equal to numbers of reel revol
*2: changing signal for electrical brake
*3: no use in this mode
*4: "H" when tape runs reverse in SWING SEARCH
*5: "H" when in record-review mode

3-14. SYSTEM CONTROL CIRCUIT AND AUDIO CIRCUIT INTERFACE

SIGNAL	MODE I/O	Pin No.	STOP	PB	REC	FF	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
AUDIO PB*2	O	IC611 (CX7991) 11 Pin (P10)	L	H	L	L	L	H	H	H*1	L*6	L	L
BIAS CONT	O	IC611 (CX7991) 13 Pin (P12)	L	L	H*3	L	L	L	L	L	L	L	L
A MUTE*6	O	CPU1 33 Pin (O0)	H	L*5	H	H	H	H	H	H	H*7	H	H

*1: includes double speed play and SWING SEAR
*2: level is changed after 40 msec delay.
*3: "L" is held during 12 CTL in record mode aft
*4: "H" when no CTL period become 0.5 sec, the
0.5 sec, the level is changed.
*5: "H" is held during 3 sec in playback mode aft
since then "L".
*6: when in record-review mode.
*7: "H" is held during 0.5 sec in record mode aft

3-15. SYSTEM CONTROL CIRCUIT AND SLOW PLAY CONTROL CIRCUIT INTERFACE

SIGNAL	MODE I/O	Pin No.	STOP	PB	REC	FF	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
CAP FWD	O	CPU2 10 Pin (R14)	H*1	H	H	H	L	H	L	*2	*2	H*1	H*1
SLOW	O	IC609 (CX7991) 2 Pin (P2)	L	L	L	L	L	L	L	H*3	H*4	L	L

*1: no use in this mode
*2: "H" when tape runs forward, "L" when tape
stop mode
*3: "L" when tape runs normal speed forward or
*4: "L" when in record-review mode

FF	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
			*1				
			*1				
NORMALITY BNORMALITY	"H" NORMALITY "L" ABNORMALITY	———	———	———	———	———	———
L	L	L	L	L	L	L	L
L	L	L	L	L	L	H	H
H	L	L	L	L	L	L	L
L	H	L	L	L	L	L	L
L	H	L	H	L*4	L*5	L	L
H	H	L	L	L	L	H	H
L	L	H	H	L	L*5	H	H
L	H	L	L	L	L	L	L
H	L	L	L	L	L	L	L
H	H	H	H	H	H	L	H

*1: numbers of pulse equal to numbers of reel revolution multiplied 60
*2: changing signal for electrical brake
*3: no use in this mode
*4: "H" when tape runs reverse in SWING SEARCH mode
*5: "H" when in record-review mode

F	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
L	L	H	H	H*1	L*6	L	L
L	L	L	L	L	L	L	L
H	H	H	H	H	H*7	H	H

*1: includes double speed play and SWING SEARCH play.
*2: level is changed after 40 msec delay.
*3: "L" is held during 12 CTL in record mode after record pause mode, since then "H".
*4: "H" when no CTL period become 0.5 sec, the CTLs are detected during more than 0.5 sec, the level is changed.
*5: "H" is held during 3 sec in playback mode after stop/FF and is held during 0.5 sec, since then "L".
*6: when in record-review mode.
*7: "H" is held during 0.5 sec in record mode after record-review mode, since then "L".

F	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
	L	H	L	*2	*2	H*1	H*1
	L	L	L	H*3	H*4	L	L

*1: no use in this mode
*2: "H" when tape runs forward, "L" when tape runs reverse, holds previous level in stop mode
*3: "L" when tape runs normal speed forward or normal speed reverse
*4: "L" when in record-review mode

3-16. SYSTEM CONTROL CIRCUIT AND SERVO CIRCUIT INTERFACE

SIGNAL \ MODE	I/O	Pin No.	STOP	PB	REC	FF	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
VD/CTL	I'	CPU2, 3 27 Pin (TC) CPU2 4 Pin (R8) CPU3 6 Pin (R10)	———	CTL	VD	CTL	CTL	CTL	CTL		TAPE RUNS CTL		
$\overline{\text{DRM ROT}}$	I'	CPU2 15 Pin (K2)	H	L	L	L	L	L	L	L	L	H	H
CAP ROT	I'	CPU2 14 Pin (K1)	L	H	H	L	L	H	H	L	L	L	L
RF SW PLS*2	I'	IC606 (TC4013) 3 Pin	disappear	appear	appear	appear	appear	appear	appear	appear	appear	disappear	disappear
TAPE SPEED (B)*3	O	CPU3 34 Pin (O1)											
DRM STOP	O	CPU2 9 Pin (R13)	H	L	L	L	L	L	L	L	L	H	H
CAP STOP	O	CPU2 8 Pin (R12)	H	L	L	H	H	L	L			H	H
VD INT	O	IC609 (CX7991) 7 Pin (P7)	L	H	L	L	L	H	H	H	L*9	L	L
REC · $\overline{\text{PAUSE}}$*4	O	CPU2 44 Pin (R0)	H	H	L*7	H	H	H	H	H	H	H	H
CUE + REV	O	IC609 (CX7991) 5 Pin (P5)	L	L	L	L	L	H	H	L	L	L	L
CAP FWD	O	CPU2 10 Pin (R14)	H*5	H	H	H	L	H	L	*6	*6	H *5	H *5

*1: "L" during capstan servo unlocked, "H" locked
*2: 30 Hz, 50% duty ratio pulse
*3: 3 bit binary coded tape speed
*4: latched output by flip-flop, clock pulses for the flip-flop are RF sw pulses.
*5: no use in this mode
*6: "H" when tape runs forward, "L" when tape runs reverse, holdes the previous level in stop mode
*7: "H" while counting 12 CTL after record panse mode, since then "L"
*8: holds the previous level
*9: when in record-review mode

3-17. SYSTEM CONTROL CIRCUIT AND VIDEO CIRCUIT INTERFACE

SIGNAL \ MODE	I/O	Pin No.	STOP	PB	REC	FF	REW	CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
PB + DUB	O	IC611 (CX7991) 12 Pin (P11)	L	H	L	L	L	H	H	H	L*5	L	L
VMUTE*1	O	CPU1 34 Pin (O1)	L	L*2	L	L	L	L	L	L	L	L	L
$\overline{\text{REC · PAUSE}}$*3	O	CPU2 44 Pin (R0)	H	H	L*4	H	H	H	H	H	H	H	H
MC	O	IC609 (CX7991) 1 Pin (P1)	L	L	L	L	L	H	H	H	L*5	L	L

*1: "H" when no CTL period become 0.5 sec, the CTLS are detected during more than 0.5 sec, the level changed.
*2: "H" is held during 3 second when in playback mode or in dubbing mode after stop mode.
*3: output latched by flip-flop, the clock signal for the flip-flop, is RF sw pulse.
*4: "H" is held during 12 CTL in record mode after releasing record pause, since then "L".
*5: "H" during record-review mode.

CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
CTL	CTL		TAPE RUNS CTL		
L	L	L	L	H	H
H	H	L	L	L	L
appear	appear	appear	appear	disappear	disappear
L	L	L	L	H	H
L	L			H	H
H	H	H	L*9	L	L
H	H	H	H	H	H
H	H	L	L	L	L
H	L	*6	*6	H *5	H *5

*1: "L" during capstan servo unlocked, "H" locked
*2: 30 Hz, 50% duty ratio pulse
*3: 3 bit binary coded tape speed
*4: latched output by flip-flop, clock pulses for the flip-flop are RF sw pulses.
*5: no use in this mode
*6: "H" when tape runs forward, "L" when tape runs reverse, holdes the previous level in stop mode
*7: "H" while counting 12 CTL after record panse mode, since then "L"
*8: holds the previous level
*9: when in record-review mode

CUE	REV	PB PAUSE	REC PAUSE	THREADING	EJECT
H	H	H	L*5	L	L
L	L	L	L	L	L
H	H	H	H	H	H
H	H	H	L*5	L	L

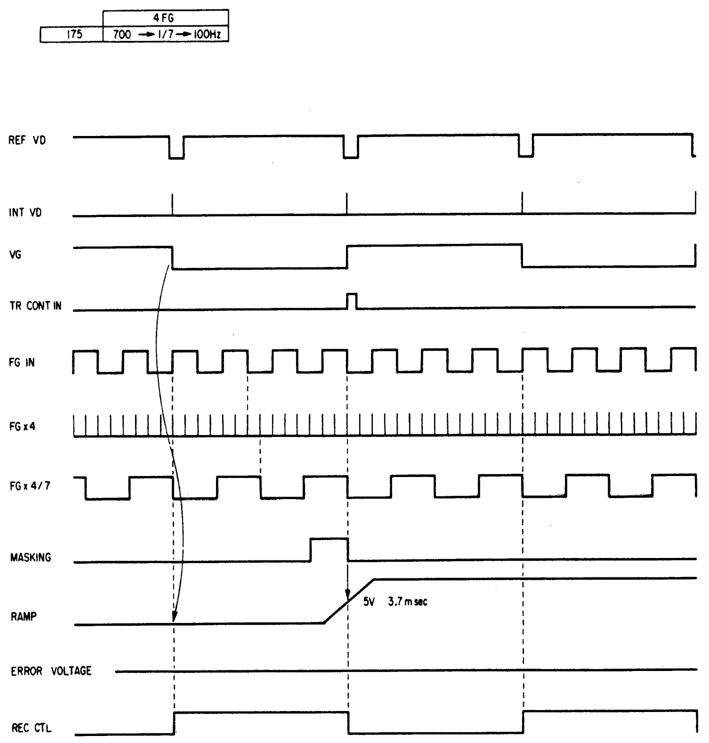
*1: "H" when no CTL period become 0.5 sec, the CTLS are detected during more than 0.5 sec, the level changed.
*2: "H" is held during 3 second when in playback mode or in dubbing mode after stop mode.
*3: output latched by flip-flop, the clock signal for the flip-flop, is RF sw pulse.
*4: "H" is held during 12 CTL in record mode after releasing record pause, since then "L".
*5: "H" during record-review mode.

3-18. SYSTEM CONTROL CIRCUIT AND MECHANISM BLOCK INTERFACE

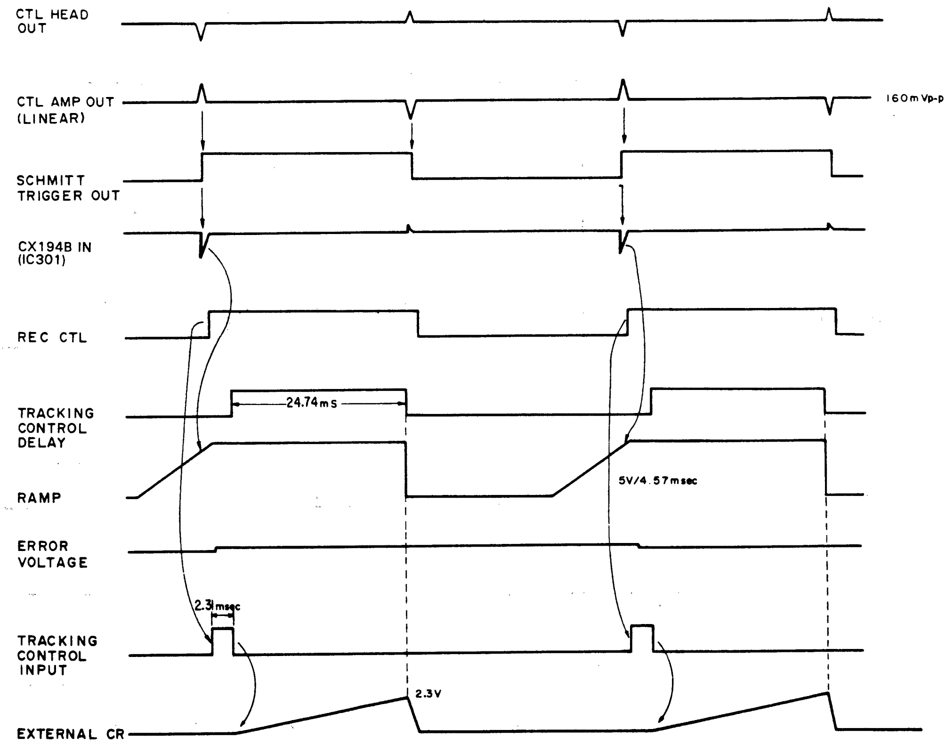
SIGNAL \ MODE	I/O	Pin No.
$\overline{\text{BRAKE PLUNGER ON}}$*1	O	CN701-5
$\overline{\text{BRAKE PLUNGER OFF}}$*1	O	CN701-4
$\overline{\text{PINCH PLUNGER ON}}$*1	O	CN701-3
$\overline{\text{PINCH PLUNGER OFF}}$*1	O	CN701-2
THREADING MOTOR (+)*1	O	CN701-8
THREADING MOTOR (–)*1	O	CN701-7
REC PROOF SW (A)*2	I	CN616-3 CPU3 16 Pin (K3)
REC PROOF SW (B)*2	O	CN616-4 CPU3 29 Pin (P1)
CASSETTE IN SW (A)*2	I	CN608-1 CPU3 13 Pin (K0)
CASSETTE IN SW (COM)*2	O	CN608-2 CPU3 29 Pin (P1)
CASSETTE IN SW (B)	I	CN608-3
THREADING END SW (A)*2	I	CN701-9 CPU3 16 Pin (K3)
THREADING END SW (B)*2	O	CN701-10 CPU3 32 Pin (P3)
UNTHREADING END SW (A)*2	I	CN616-1 CPU3 16 Pin (K3)
UNTHREADING END SW (B)*2	O	CN616-2 CPU3 31 Pin (P2)
S SENSOR OUT*3	I	CN617-2 IC607 7 Pin
T SENSOR OUT*4	I	CN604-2 IC607 3 Pin
TAPE SENS	I	CN616-5
IF LED	O	CN616-7

*1: control signal for brake solenoid, pinch roller solenoid and threading motor
*2: key matrix signal
*3: osc freq 600 kHz at tape end
*4: osc freq 600 kHz at tape end

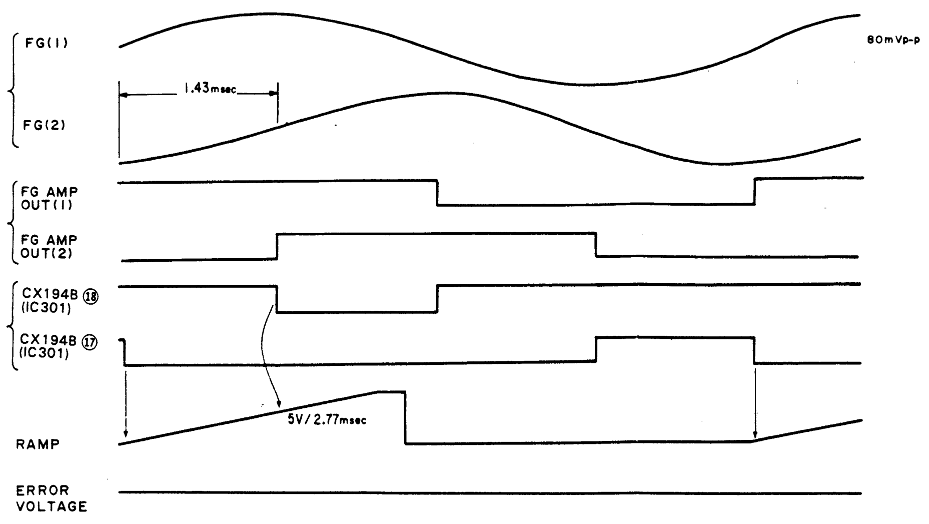
3-19. CAPSTAN PHASE SYSTEM TIMING CHART (REC)


4FG
175
700 → 1/7 → 100Hz
REF VD
INT VD
VG
TR CONT IN
FG IN
FG x 4
FG x 4/7
MASKING
RAMP
5V 3.7 m sec
ERROR VOLTAGE
REC CTL

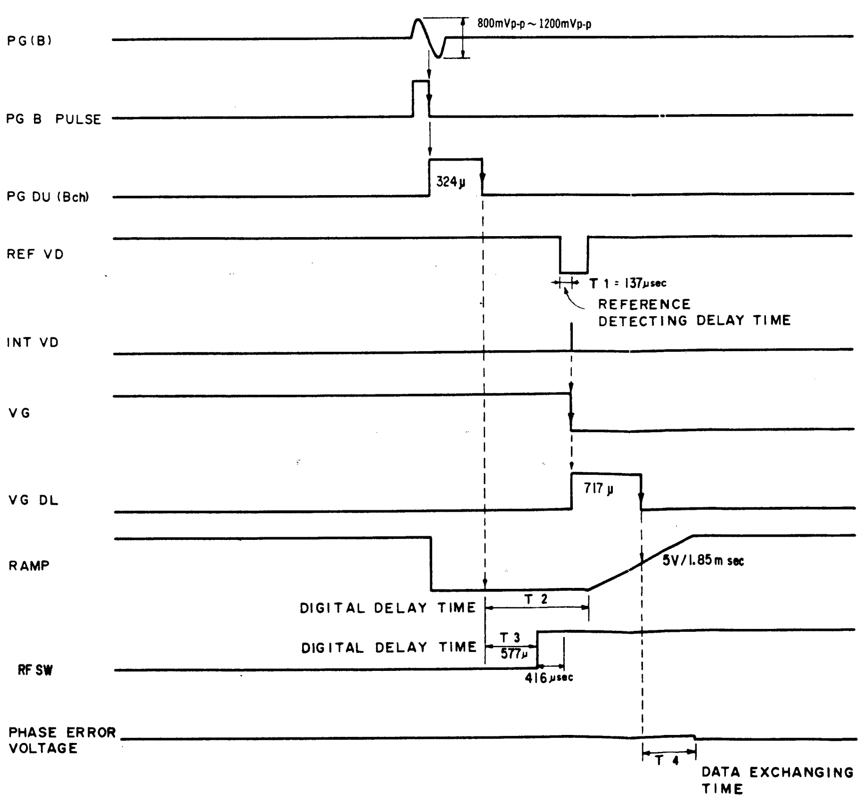
3-20. CAPSTAN PHASE SYSTEM TIMING CHART (PB)


CTL HEAD OUT
CTL AMP OUT (LINEAR)
160 m Vp-p
SCHMITT TRIGGER OUT
CX194B IN (IC301)
REC CTL
TRACKING CONTROL DELAY
24.74 m s
RAMP
5V/4.57 m sec
ERROR VOLTAGE
2.31 msec
TRACKING CONTROL INPUT
2.3V
EXTERNAL CR

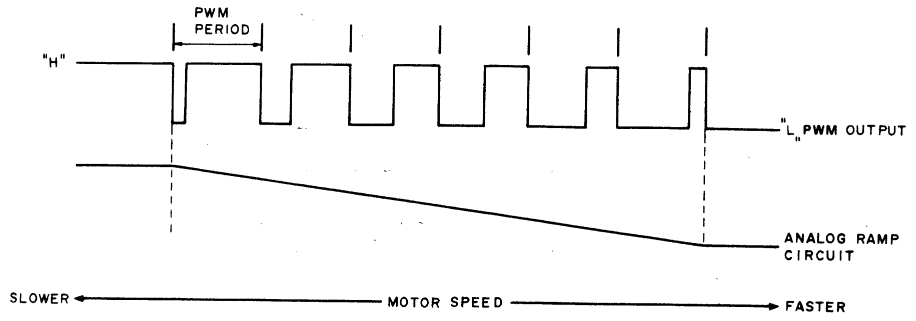
3-21. CAPSTAN SPEED SYSTEM TIMING CHART


FG(1)
FG(2)
80 m Vp-p
1.43 msec
FG AMP OUT(1)
FG AMP OUT(2)
CX194B ⑱ (IC301)
CX194B ⑰ (IC301)
RAMP
5V/2.77 msec
ERROR VOLTAGE

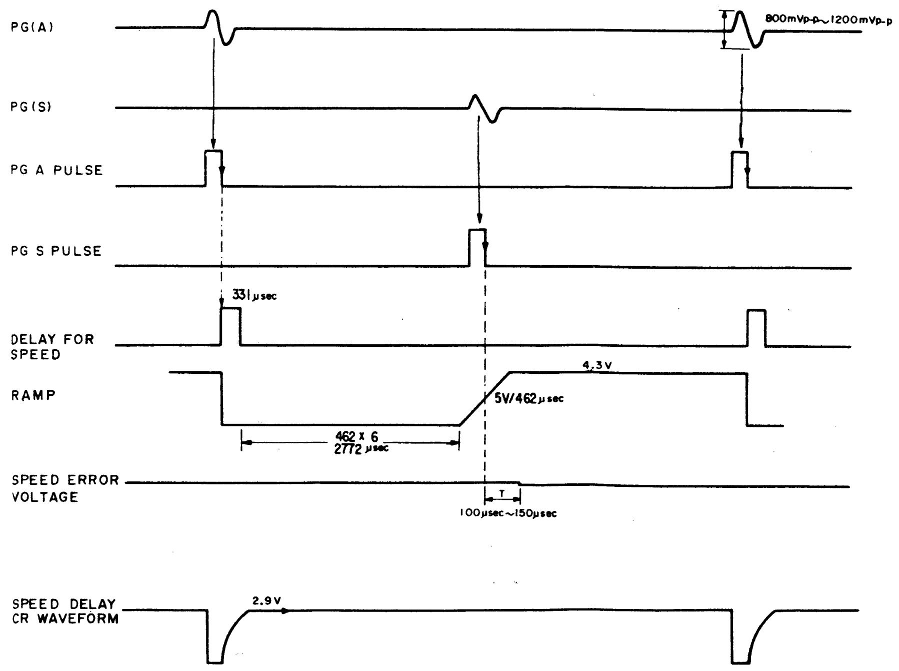
3-22. DRUM PHASE SYSTEM TIMING CHART


PG(B)
800mVp-p ~ 1200mVp-p
PG B PULSE
PG DU (Bch)
324μ
REF VD
T 1 = 137μsec
REFERENCE DETECTING DELAY TIME
INT VD
VG
VG DL
717 μ
RAMP
5V/1.85 m sec
DIGITAL DELAY TIME
T 2
DIGITAL DELAY TIME
T 3
577μ
416μsec
RF SW
PHASE ERROR VOLTAGE
T 4
DATA EXCHANGING TIME

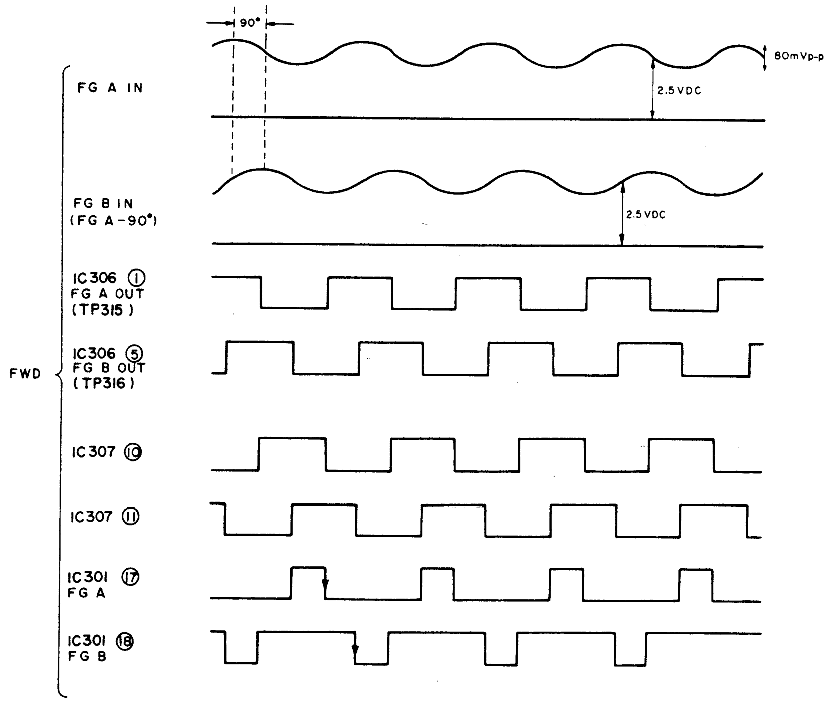
3-23. INSTRUMENTATION COUNTER TIMING CHART


PWM PERIOD
"H"
"L" PWM OUTPUT
ANALOG RAMP CIRCUIT
SLOWER
MOTOR SPEED
FASTER

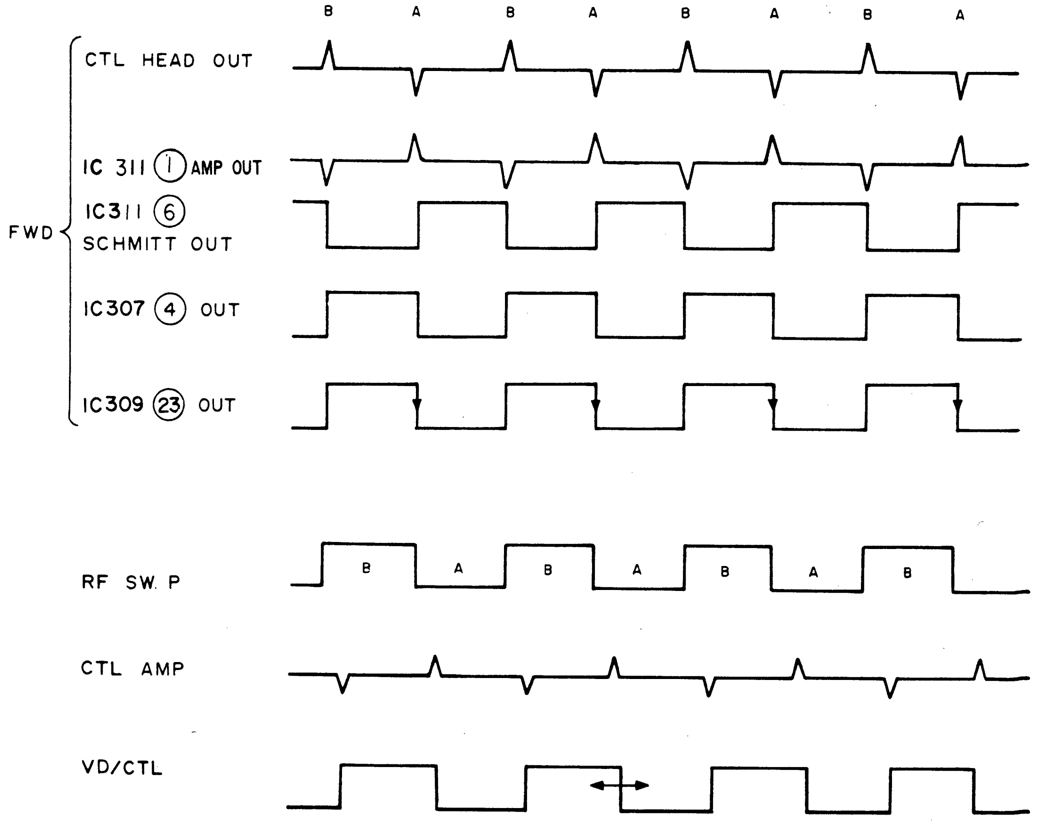
3-24. DRUM SPEED SYSTEM TIMING CHART


PG(A)
800mVp-p~1200mVp-p
PG(S)
PG A PULSE
PG S PULSE
331μsec
DELAY FOR SPEED
RAMP
4.3V
5V/462μsec
462 X 6
2772 μsec
SPEED ERROR VOLTAGE
T
100μsec~150μsec
SPEED DELAY CR WAVEFORM
2.9V

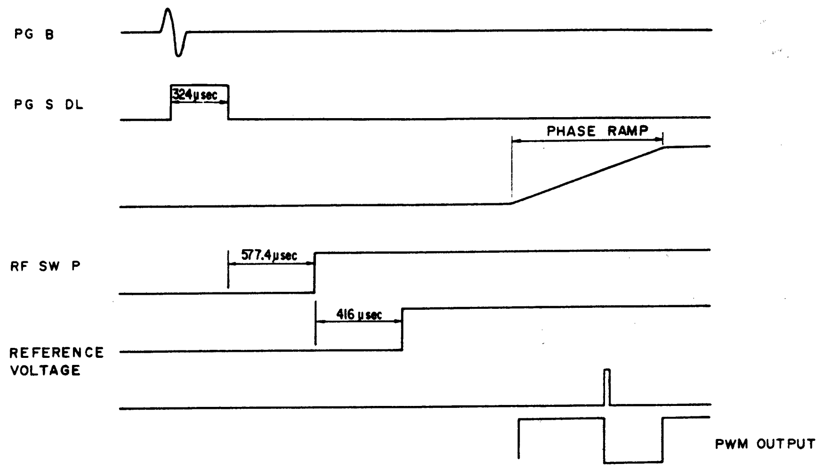
3-25. FG CIRCUIT TIMING CHART


90°
80mVp-p
FG A IN
2.5VDC
FG B IN
(FG A-90°)
2.5VDC
FWD
IC306 ①
FG A OUT
(TP315)
IC306 ⑤
FG B OUT
(TP316)
IC307 ⑩
IC307 ⑪
IC301 ⑰
FG A
IC301 ⑱
FG B

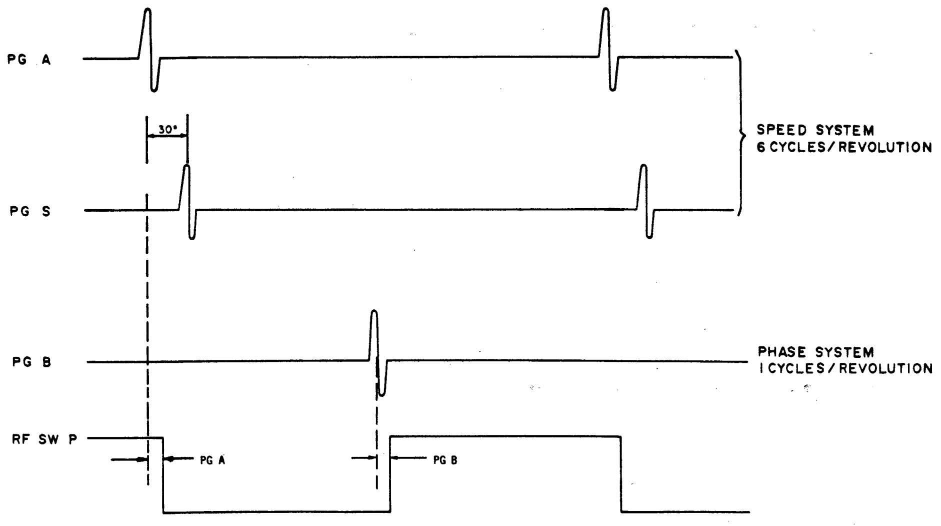
3-26. CTL CIRCUIT TIMING CHART


B
A
B
A
B
A
B
A
CTL HEAD OUT
IC 311 ① AMP OUT
IC311 ⑥
SCHMITT OUT
FWD
IC307 ④ OUT
IC309 ㉓ OUT
RF SW. P
B
A
B
A
B
A
B
CTL AMP
VD/CTL

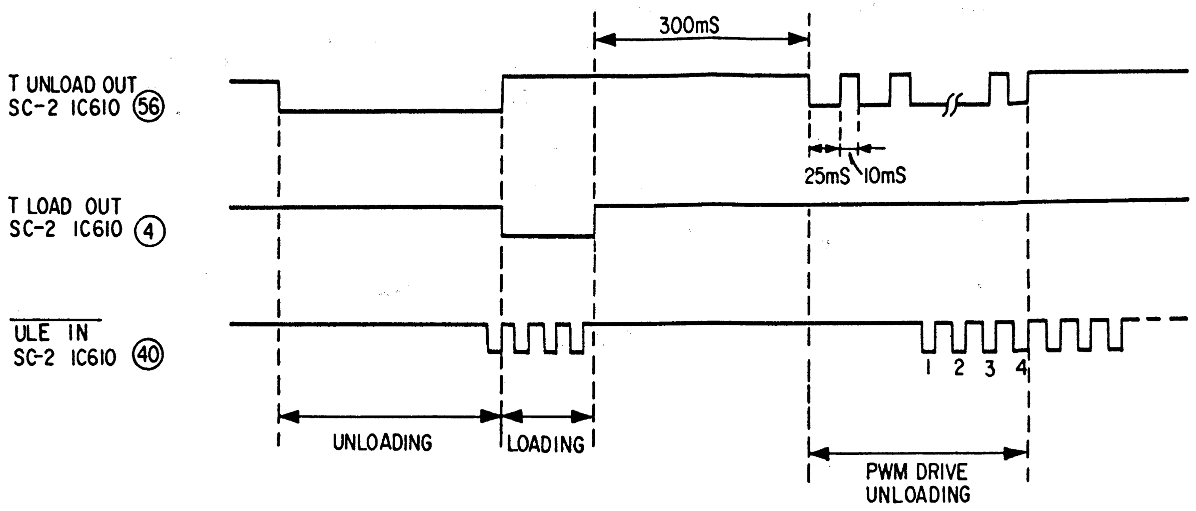
3-27. PG-A, PG-S TIMING CHART


PG B
PG S DL
324μsec
PHASE RAMP
RF SW P
577.4μsec
416 μsec
REFERENCE VOLTAGE
PWM OUTPUT

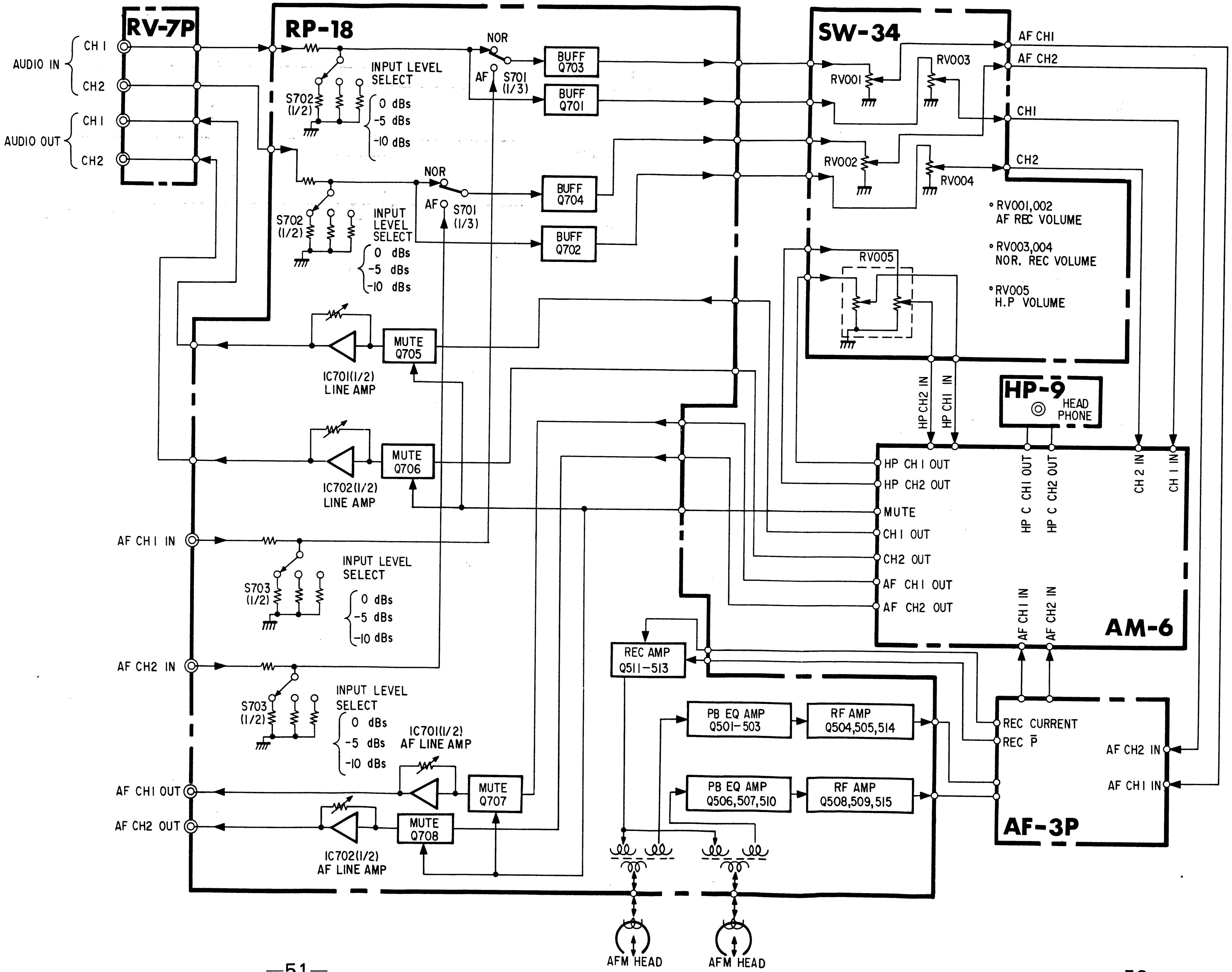
3-28. PG-A, PG-B, PG-S TIMING CHART


PG A
30°
PG S
SPEED SYSTEM
6 CYCLES/REVOLUTION
PG B
PHASE SYSTEM
1 CYCLES/REVOLUTION
RF SW P
PG A
PG B

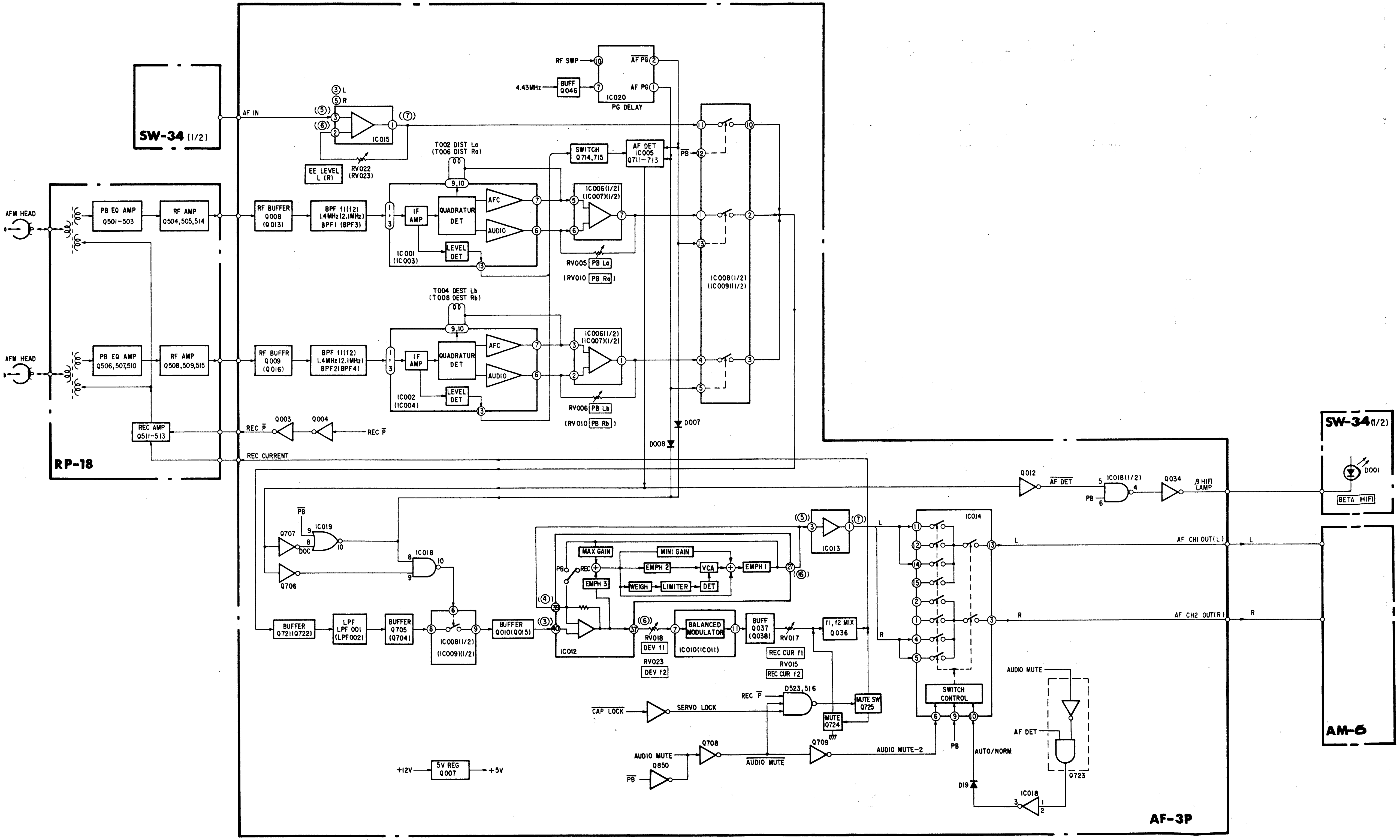
3-29. H. FF/H. REW THREADING MOTOR CONTROL TIMING CHART


300mS
T UNLOAD OUT
SC-2 IC610 ⑯
25mS
10mS
T LOAD OUT
SC-2 IC610 ④
ULE IN
SC-2 IC610 ㊵
1 2 3 4
UNLOADING
LOADING
PWM DRIVE
UNLOADING

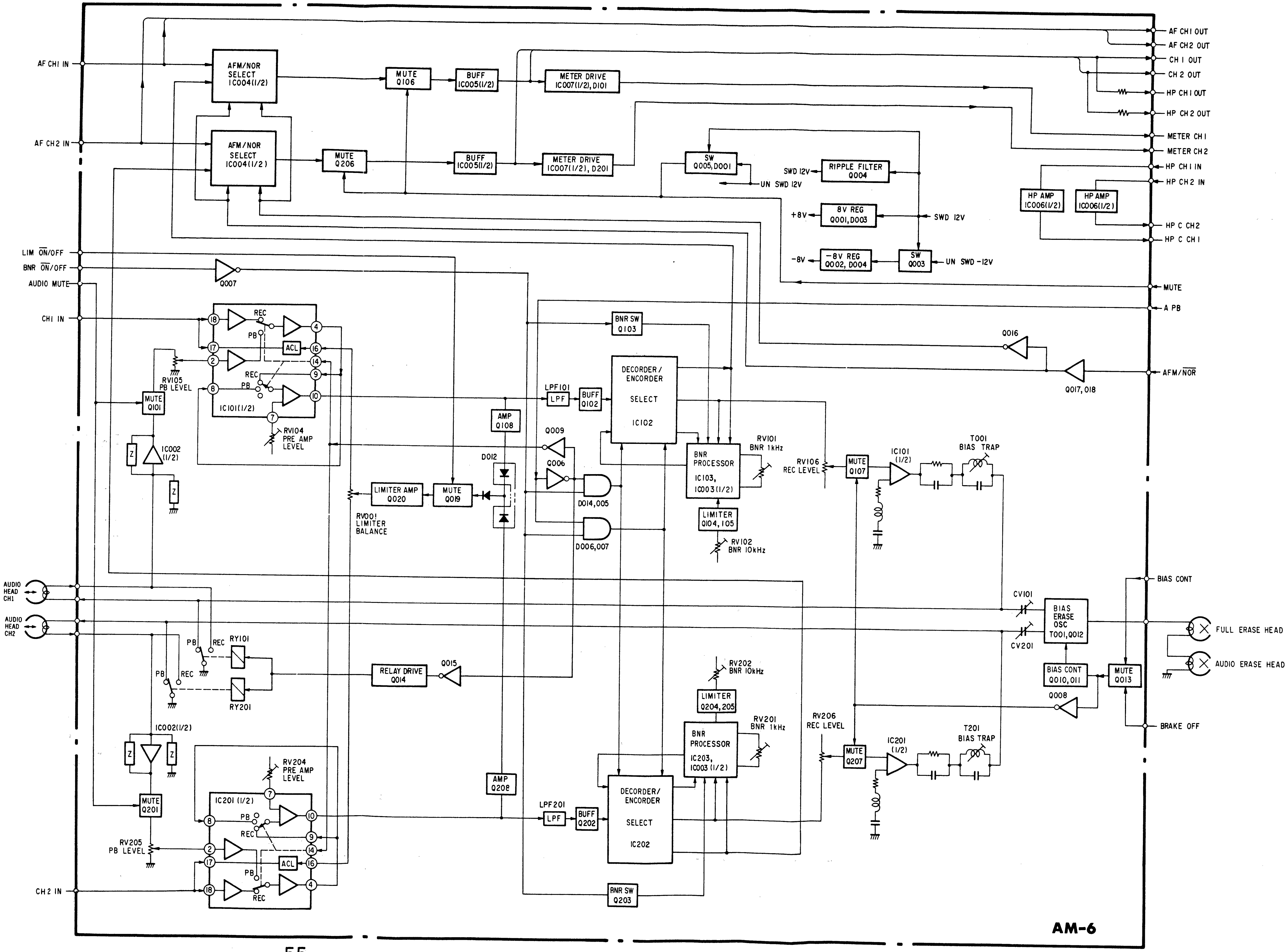
3-30. AUDIO BLOCK DIAGRAM (1)


RV-7P
RP-18
SW-34
HP-9
AM-6
AF-3P
AUDIO IN
CH I
CH2
AUDIO OUT
CH I
CH2
INPUT LEVEL SELECT
S702 (1/2)
0 dBs
-5 dBs
-10 dBs
NOR
AF
S701 (1/3)
BUFF Q703
BUFF Q701
BUFF Q704
BUFF Q702
MUTE Q705
IC701(1/2) LINE AMP
MUTE Q706
IC702(1/2) LINE AMP
AF CH I IN
AF CH2 IN
S703 (1/2)
IC701(1/2) AF LINE AMP
MUTE Q707
MUTE Q708
IC702(1/2) AF LINE AMP
AF CHI OUT
AF CH2 OUT
RV001
RV002
RV003
RV004
RV005
AF CHI
AF CH2
CHI
CH2
• RV001,002 AF REC VOLUME
• RV003,004 NOR. REC VOLUME
• RV005 H.P VOLUME
HP CH2 IN
HP CHI IN
HEAD PHONE
HP CH I OUT
HP CH2 OUT
MUTE
CH I OUT
CH2 OUT
AF CH I OUT
AF CH2 OUT
HP C CHI OUT
HP C CH2 OUT
CH 2 IN
CH I IN
AF CHI IN
AF CH2 IN
REC AMP Q511–513
PB EQ AMP Q501–503
RF AMP Q504,505,514
PB EQ AMP Q506,507,510
RF AMP Q508,509,515
REC CURRENT
REC P̄
AF CH2 IN
AF CHI IN
AFM HEAD
AFM HEAD

3-31. AUDIO BLOCK DIAGRAM (2)

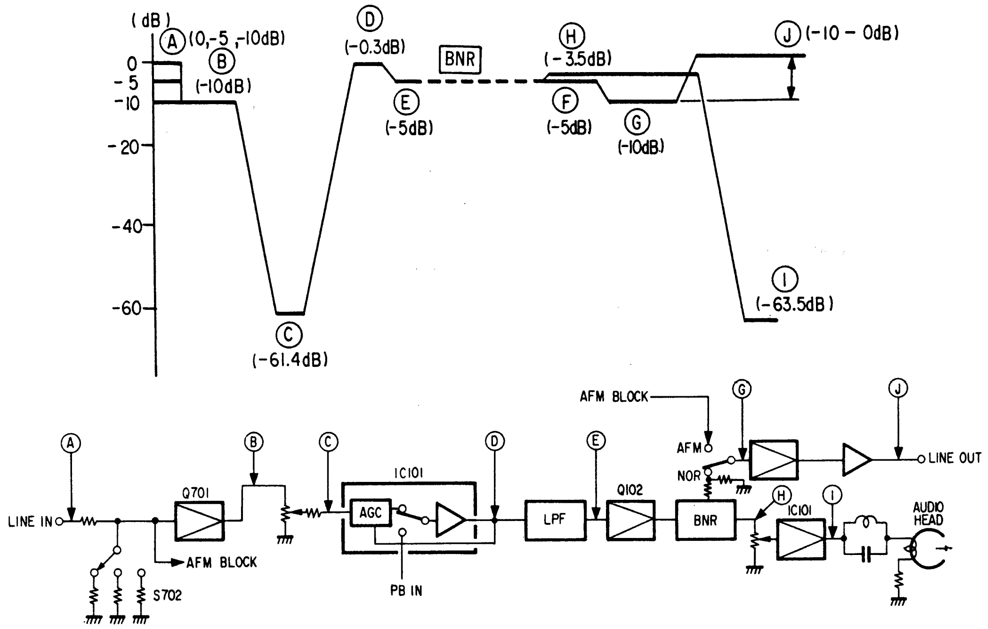

SW-34 (1/2)
AF IN
RP-18
AFM HEAD
AFM HEAD
PB EQ AMP Q501-503
RF AMP Q504,505,514
PB EQ AMP Q506,507,510
RF AMP Q508,509,515
REC AMP Q511-513
REC P
REC CURRENT
Q003
Q004
REC P
IC015
EE LEVEL L (R)
RV022 (RV023)
RF BUFFER Q008 (Q013)
BPF f1(f2) 1.4MHz(2.1MHz) BPF1 (BPF3)
IF AMP
QUADRATUR DET
AFC
AUDIO
LEVEL DET
IC001 (IC003)
T002 DIST La (T006 DIST Ra)
RF BUFFR Q009 (Q016)
BPF f1(f2) 1.4MHz(2.1MHz) BPF2(BPF4)
IC002 (IC004)
T004 DEST Lb (T008 DEST Rb)
IC006(1/2) (IC007)(1/2)
RV005 PB La
(RV010 PB Ra)
RV006 PB Lb
(RV010 PB Rb)
RF SWP
4.43MHz
BUFF Q046
AF PG
IC020 PG DELAY
SWITCH Q714,715
AF DET IC005 Q711-713
PB
IC008(1/2) (IC009)(1/2)
D007
D008
Q707
IC019
DOC
Q706
IC018
PB
BUFFER Q721(Q722)
LPF LPF 001 (LPF002)
BUFFER Q705 (Q704)
IC008(1/2) (IC009)(1/2)
BUFFER Q010(Q015)
MAX GAIN
MINI GAIN
EMPH 2
VCA
EMPH 1
EMPH 3
WEIGH
LIMITER
DET
REC
IC012
IC013
BALANCED MODULATOR
IC010(IC011)
BUFF Q037 (Q038)
RV017
f1, f2 MIX Q036
RV018 DEV f1
RV023 DEV f2
REC CUR f1
RV015
REC CUR f2
D523, 516
REC P
CAP LOCK
SERVO LOCK
MUTE SW Q725
MUTE Q724
AUDIO MUTE
Q850
PB
Q708
AUDIO MUTE
Q709
AUDIO MUTE-2
+12V
5V REG Q007
+5V
Q012
AF DET
IC018(1/2)
Q034
β HIFI LAMP
IC014
SWITCH CONTROL
PB
AUTO/NORM
D19
IC018
AUDIO MUTE
AF DET
Q723
AF CH1 OUT(L)
AF CH2 OUT(R)
L
R
SW-34(1/2)
D001
BETA HIFI
AM-6
AF-3P

3-32. AUDIO BLOCK DIAGRAM (3)


AF CH1 IN
AF CH2 IN
LIM ON/OFF
BNR ON/OFF
AUDIO MUTE
CH1 IN
CH2 IN
AUDIO HEAD CH1
AUDIO HEAD CH2
AFM/NOR SELECT IC004(1/2)
AFM/NOR SELECT IC004(1/2)
MUTE Q106
MUTE Q206
BUFF IC005(1/2)
BUFF IC005(1/2)
METER DRIVE IC007(1/2), D101
METER DRIVE IC007(1/2), D201
SW Q005, D001
RIPPLE FILTER Q004
SWD 12V
UN SWD 12V
+8V
8V REG Q001, D003
SWD 12V
-8V
-8V REG Q002, D004
SW Q003
UN SWD -12V
HP AMP IC006(1/2)
HP AMP IC006(1/2)
AF CH1 OUT
AF CH2 OUT
CH 1 OUT
CH 2 OUT
HP CH1 OUT
HP CH2 OUT
METER CH1
METER CH2
HP CH1 IN
HP CH2 IN
HP C CH2
HP C CH1
MUTE
A PB
AFM/NOR
Q007
BNR SW Q103
Q016
Q017, 018
REC
PB
ACL
RV105 PB LEVEL
MUTE Q101
IC101(1/2)
RV104 PRE AMP LEVEL
IC002 (1/2)
Z
LPF101
LPF
BUFF Q102
DECORDER/ ENCORDER SELECT IC102
AMP Q108
Q009
Q006
D014, 005
D006, 007
D012
LIMITER AMP Q020
MUTE Q019
RV001 LIMITER BALANCE
BNR PROCESSOR IC103, IC003(1/2)
RV101 BNR 1kHz
LIMITER Q104, 105
RV102 BNR 10kHz
RV106 REC LEVEL
MUTE Q107
IC101 (1/2)
T001 BIAS TRAP
CV101
CV201
BIAS ERASE OSC T001, Q012
BIAS CONT
FULL ERASE HEAD
AUDIO ERASE HEAD
BIAS CONT Q010, 011
MUTE Q013
Q008
BRAKE OFF
RY101
RY201
RELAY DRIVE Q014
Q015
IC002(1/2)
MUTE Q201
RV205 PB LEVEL
IC201 (1/2)
RV204 PRE AMP LEVEL
AMP Q208
LPF201
BUFF Q202
DECORDER/ ENCORDER SELECT IC202
BNR SW Q203
RV202 BNR 10kHz
LIMITER Q204, 205
BNR PROCESSOR IC203, IC003 (1/2)
RV201 BNR 1kHz
RV206 REC LEVEL
MUTE Q207
IC201 (1/2)
T201 BIAS TRAP
AM-6

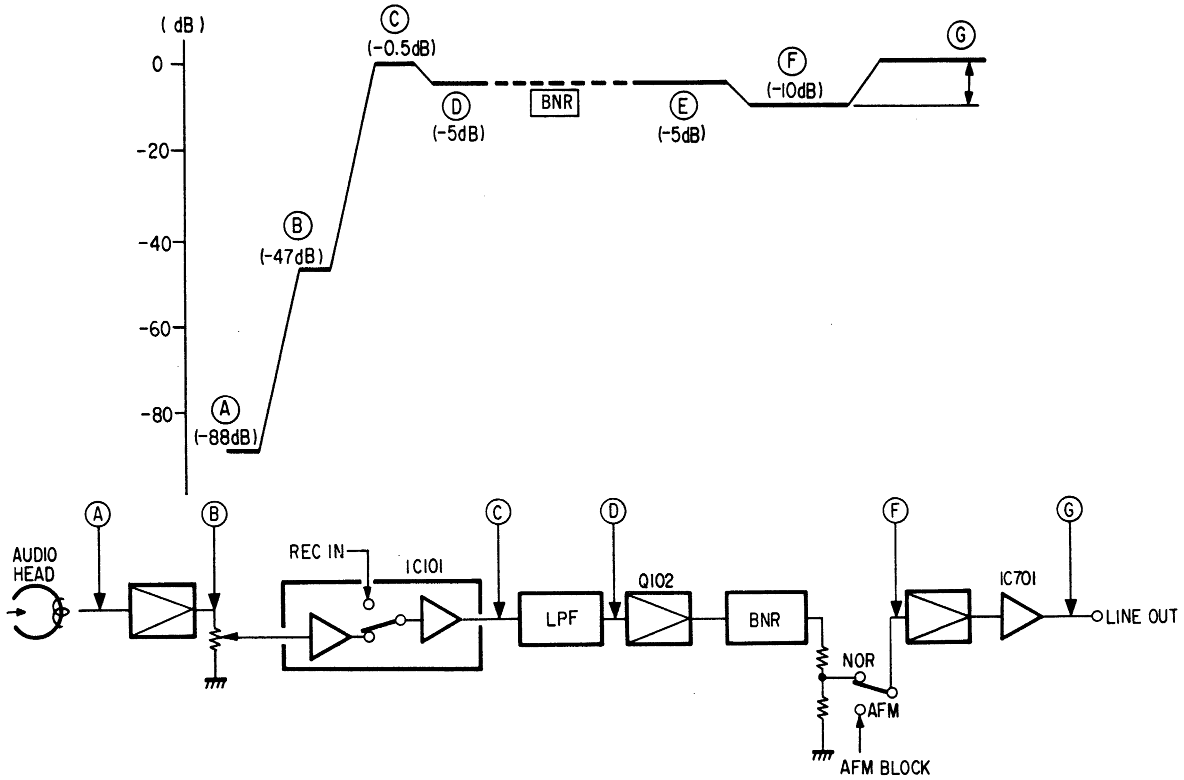
3-33. NORMAL AUDIO LEVEL DIAGRAM (REC)

REC MODE
0dB = 0.775Vrms
f = 333Hz


(dB)
0
-5
-10
-20
-40
-60
Ⓐ (0, -5, -10dB)
Ⓑ (-10dB)
Ⓒ (-61.4dB)
Ⓓ (-0.3dB)
Ⓔ (-5dB)
BNR
Ⓗ (-3.5dB)
Ⓕ (-5dB)
Ⓖ (-10dB)
Ⓙ (-10 - 0dB)
Ⓘ (-63.5dB)
AFM BLOCK
AFM
NOR
LINE OUT
LINE IN
Q701
AFM BLOCK
S702
IC101
AGC
PB IN
LPF
Q102
BNR
IC101
AUDIO HEAD

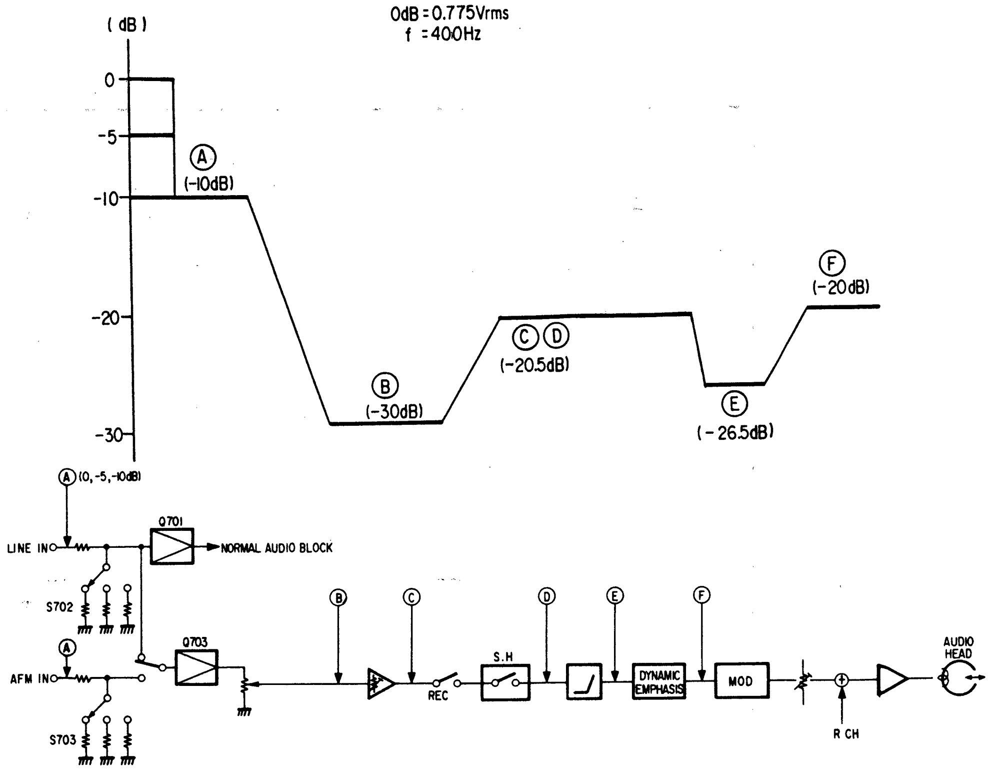
3-34. NORMAL AUDIO LEVEL DIAGRAM (PB)

PB MODE
0 dB = 0.775V rms
f = 333Hz


(dB)
0
-20
-40
-60
-80
Ⓐ (-88dB)
Ⓑ (-47dB)
Ⓒ (-0.5dB)
Ⓓ (-5dB)
BNR
Ⓔ (-5dB)
Ⓕ (-10dB)
Ⓖ
AUDIO HEAD
REC IN
IC101
LPF
Q102
BNR
NOR
AFM
AFM BLOCK
IC701
LINE OUT

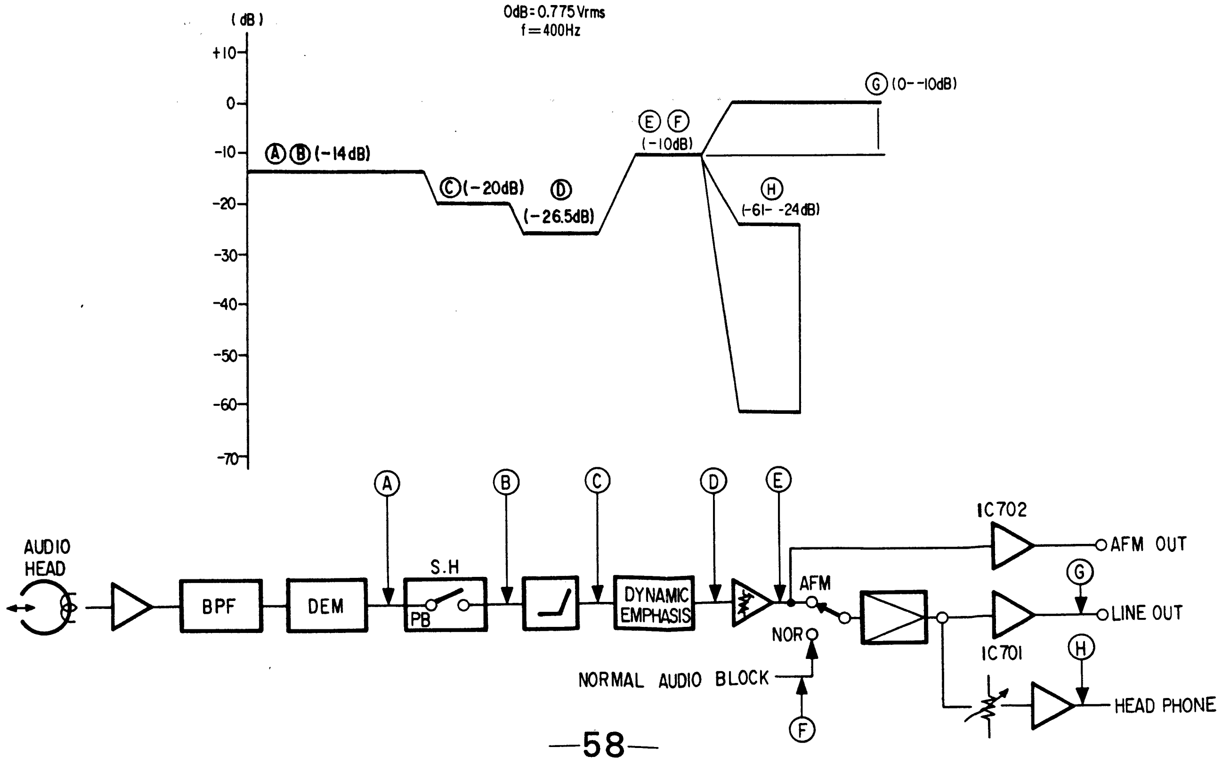
3-35. AFM (Beta hi-fi) LEVEL DIAGRAM (REC)

REC MODE
0dB = 0.775Vrms
f = 400Hz

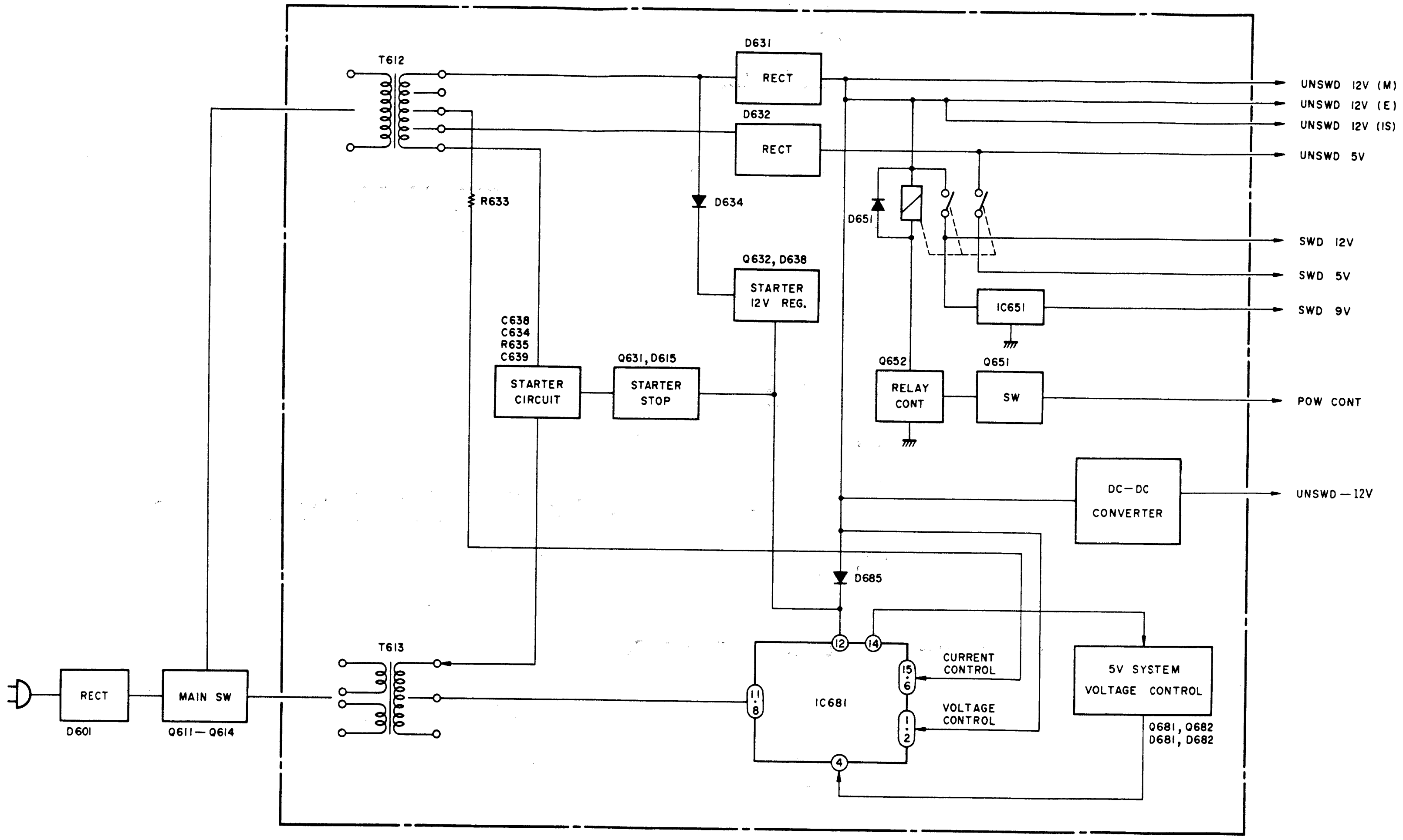

(dB)
0
-5
-10
-20
-30
Ⓐ (-10dB)
Ⓑ (-30dB)
Ⓒ Ⓓ (-20.5dB)
Ⓔ (-26.5dB)
Ⓕ (-20dB)
Ⓐ (0, -5, -10dB)
LINE IN
Q701
NORMAL AUDIO BLOCK
S702
Ⓐ
AFM IN
Q703
S703
REC
S.H
DYNAMIC EMPHASIS
MOD
R CH
AUDIO HEAD

3-36. AFM (Beta hi-fi) LEVEL DIAGRAM (PB)

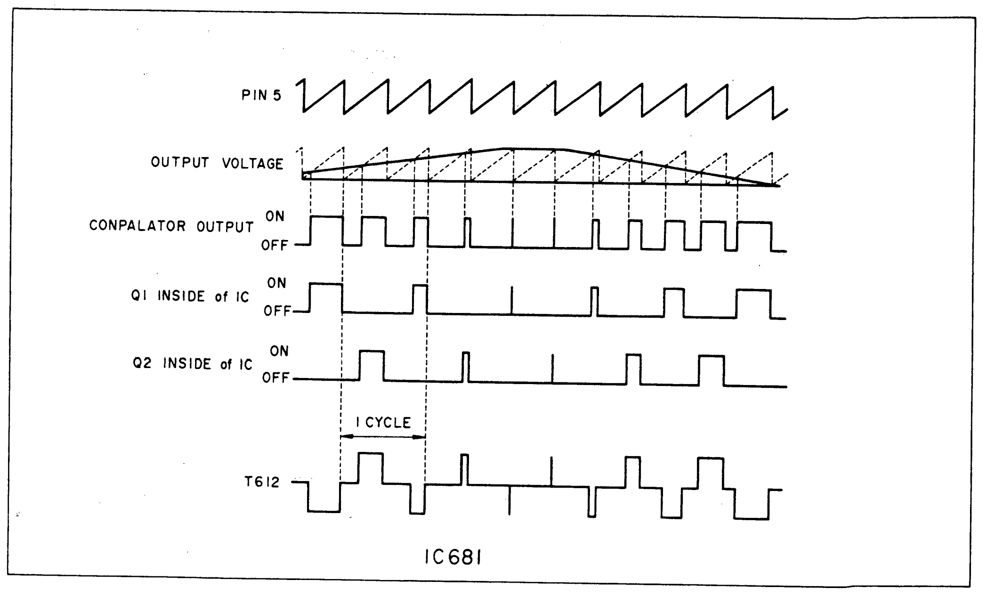
PB MODE
0dB = 0.775Vrms
f = 400Hz


(dB)
+10
0
-10
-20
-30
-40
-50
-60
-70
Ⓐ Ⓑ (-14dB)
Ⓒ (-20dB)
Ⓓ (-26.5dB)
Ⓔ Ⓕ (-10dB)
Ⓖ (0 - -10dB)
Ⓗ (-61 - -24dB)
AUDIO HEAD
BPF
DEM
S.H
PB
DYNAMIC EMPHASIS
AFM
NOR
IC702
AFM OUT
LINE OUT
IC701
HEAD PHONE
NORMAL AUDIO BLOCK
Ⓕ

3-37. POWER SUPPLY BLOCK DIAGRAM

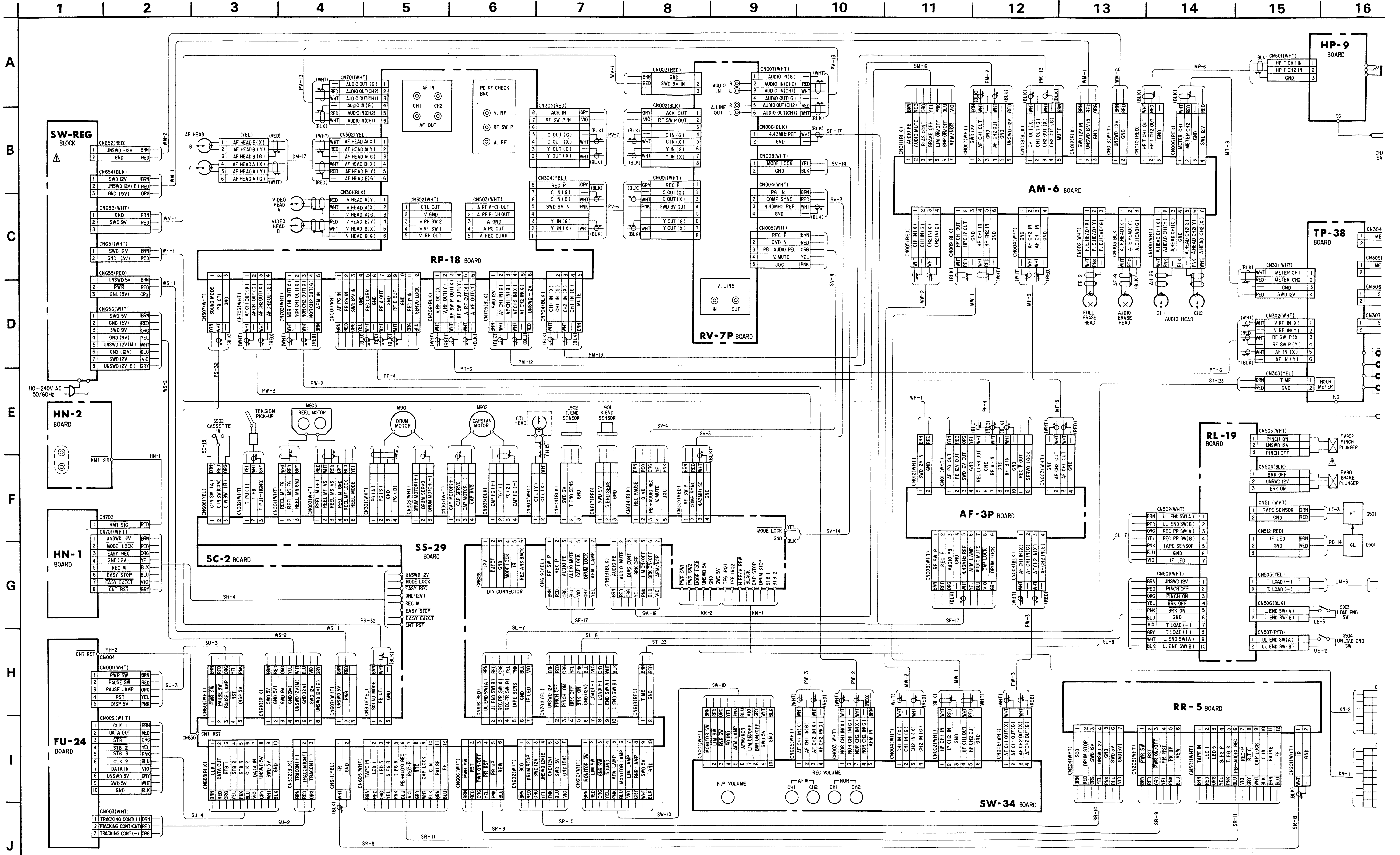

T612
D631
RECT
D632
RECT
UNSWD 12V (M)
UNSWD 12V (E)
UNSWD 12V (IS)
UNSWD 5V
R633
D634
D651
SWD 12V
SWD 5V
SWD 9V
Q632, D638
STARTER
12V REG.
IC651
C638
C634
R635
C639
STARTER
CIRCUIT
Q631, D615
STARTER
STOP
Q652
RELAY
CONT
Q651
SW
POW CONT
DC—DC
CONVERTER
UNSWD —12V
D685
T613
RECT
D601
MAIN SW
Q611—Q614
12
14
15
6
11
8
IC681
1
2
4
CURRENT
CONTROL
VOLTAGE
CONTROL
5V SYSTEM
VOLTAGE CONTROL
Q681, Q682
D681, D682

3-38. POWER SUPPLY TIMING CHART



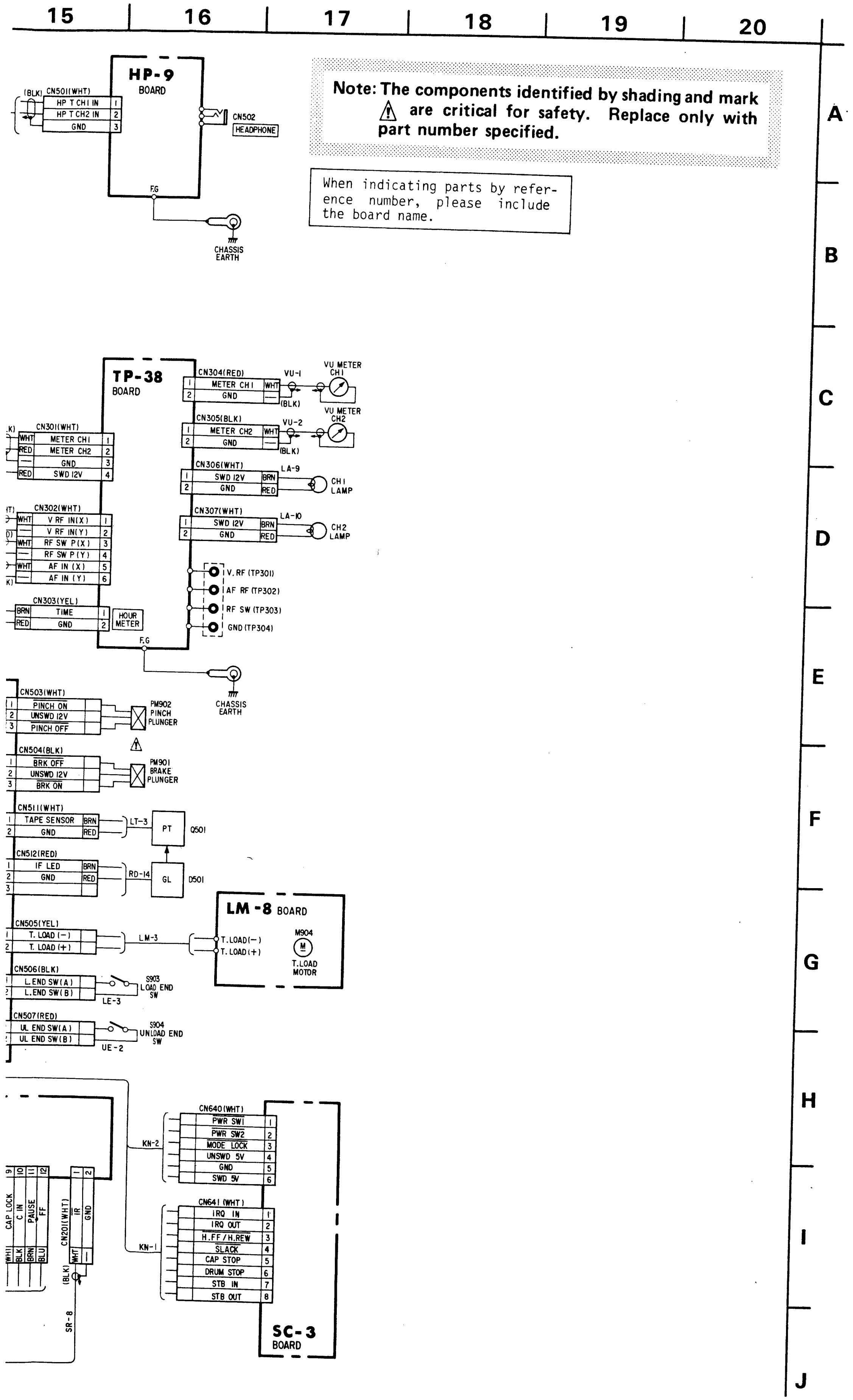
SECTION 4
SCHEMATIC DIAGRAM AND PRINTED WIRING BOARDS

4-1. FRAME SCHEMATIC DIAGRAM

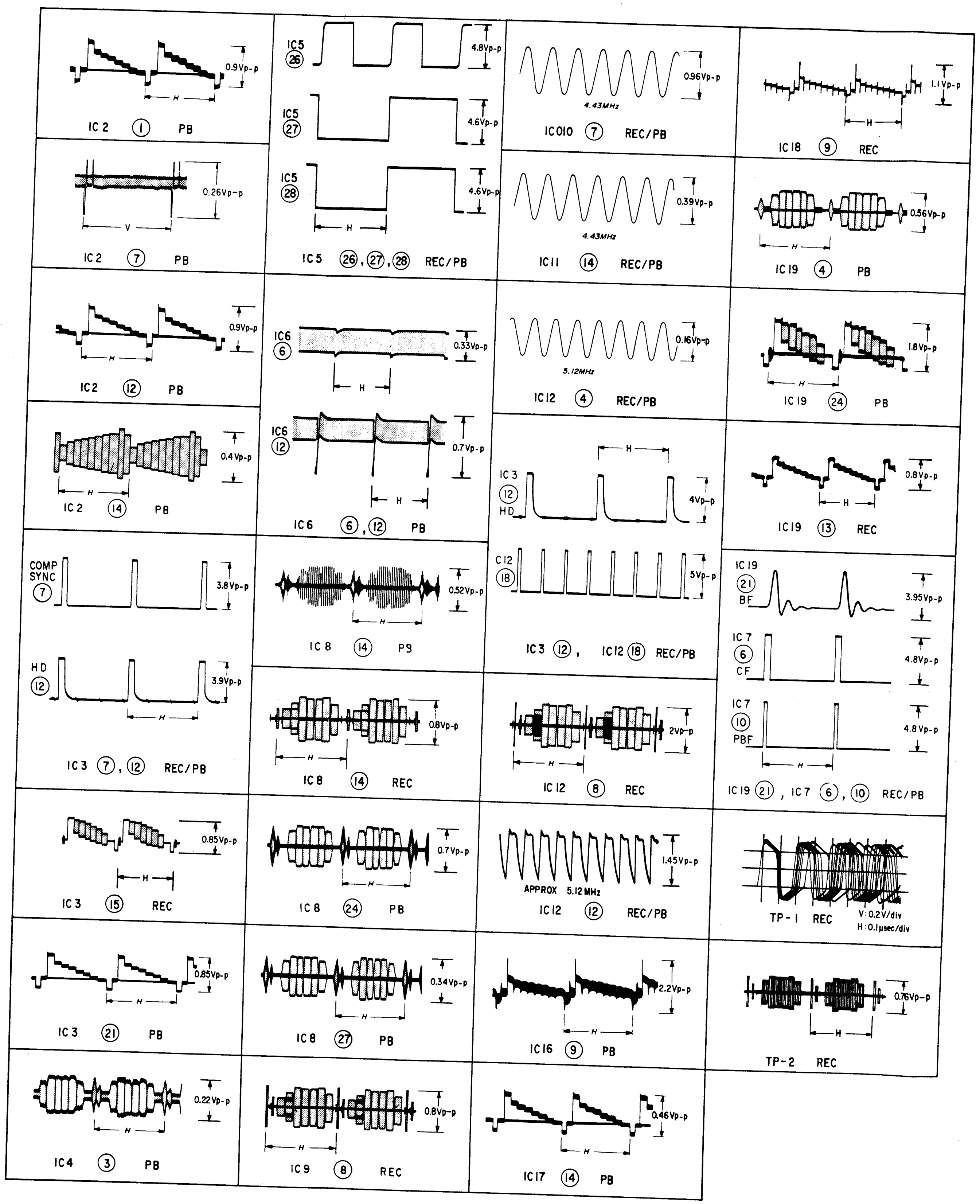

SW-REG BLOCK
HN-2 BOARD
HN-1 BOARD
FU-24 BOARD
RP-18 BOARD
RV-7P BOARD
AM-6 BOARD
HP-9 BOARD
TP-38 BOARD
SC-2 BOARD
SS-29 BOARD
AF-3P BOARD
RL-19 BOARD
RR-5 BOARD
SW-34 BOARD
110-240V AC 50/60Hz
AF HEAD
VIDEO HEAD A
VIDEO HEAD B
S902 CASSETTE IN
TENSION PICK-UP
M903 REEL MOTOR
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
CTL HEAD
L902 T.END SENSOR
L901 S.END SENSOR
FULL ERASE HEAD
AUDIO ERASE HEAD
CH1 CH2 AUDIO HEAD
PM902 PINCH PLUNGER
PM901 BRAKE PLUNGER
S903 LOAD END SW
S904 UNLOAD END SW
HOUR METER
DIN CONNECTOR
H.P VOLUME
REC VOLUME
AFM NOR CH1 CH2
V. LINE IN OUT
AUDIO IN R L
A.LINE OUT R L
PB RF CHECK BNC
AF IN CH1 CH2 AF OUT
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

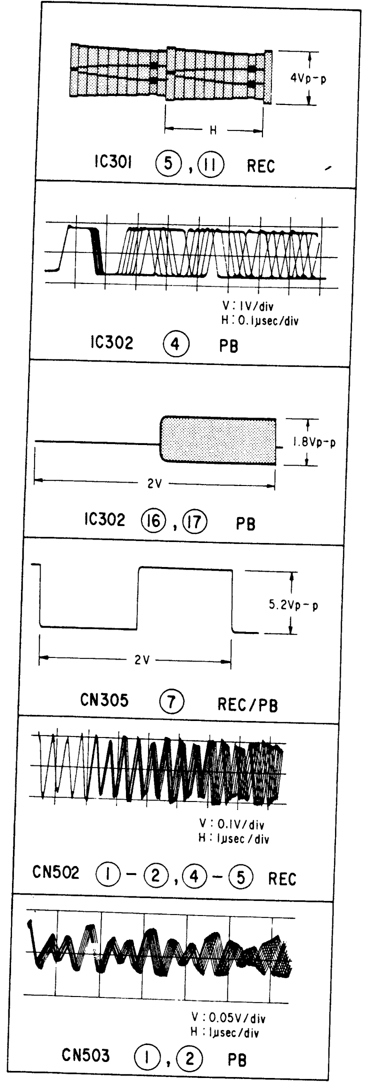
When indicating parts by reference number, please include the board name.


15
16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
HP-9 BOARD
CN501(WHT)
HP T CH1 IN
HP T CH2 IN
GND
CN502 HEADPHONE
F.G
CHASSIS EARTH
TP-38 BOARD
CN301(WHT)
METER CH1
METER CH2
GND
SWD 12V
CN302(WHT)
V RF IN(X)
V RF IN(Y)
RF SW P(X)
RF SW P(Y)
AF IN (X)
AF IN (Y)
CN303(YEL)
TIME
GND
HOUR METER
CN304(RED)
METER CH1
GND
VU-1
VU METER CH1
CN305(BLK)
METER CH2
GND
VU-2
VU METER CH2
CN306(WHT)
SWD 12V
GND
LA-9
CH1 LAMP
CN307(WHT)
SWD 12V
GND
LA-10
CH2 LAMP
V.RF (TP301)
AF RF (TP302)
RF SW (TP303)
GND (TP304)
CN503(WHT)
PINCH ON
UNSWD 12V
PINCH OFF
PM902 PINCH PLUNGER
CN504(BLK)
BRK OFF
UNSWD 12V
BRK ON
PM901 BRAKE PLUNGER
CN511(WHT)
TAPE SENSOR
GND
LT-3
PT
Q501
CN512(RED)
IF LED
GND
RD-14
GL
D501
CN505(YEL)
T. LOAD (−)
T. LOAD (+)
LM-3
LM-8 BOARD
M904
T.LOAD MOTOR
CN506(BLK)
L.END SW(A)
L.END SW(B)
LE-3
S903 LOAD END SW
CN507(RED)
UL END SW(A)
UL END SW(B)
UE-2
S904 UNLOAD END SW
KN-2
CN640(WHT)
PWR SW1
PWR SW2
MODE LOCK
UNSWD 5V
GND
SWD 5V
KN-1
CN641(WHT)
IRQ IN
IRQ OUT
H.FF/H.REW
SLACK
CAP STOP
DRUM STOP
STB IN
STB OUT
SC-3 BOARD
CAP LOCK
C IN
PAUSE
FF
CN201(WHT)
IR
GND
SR-8

RV-7P BOARD

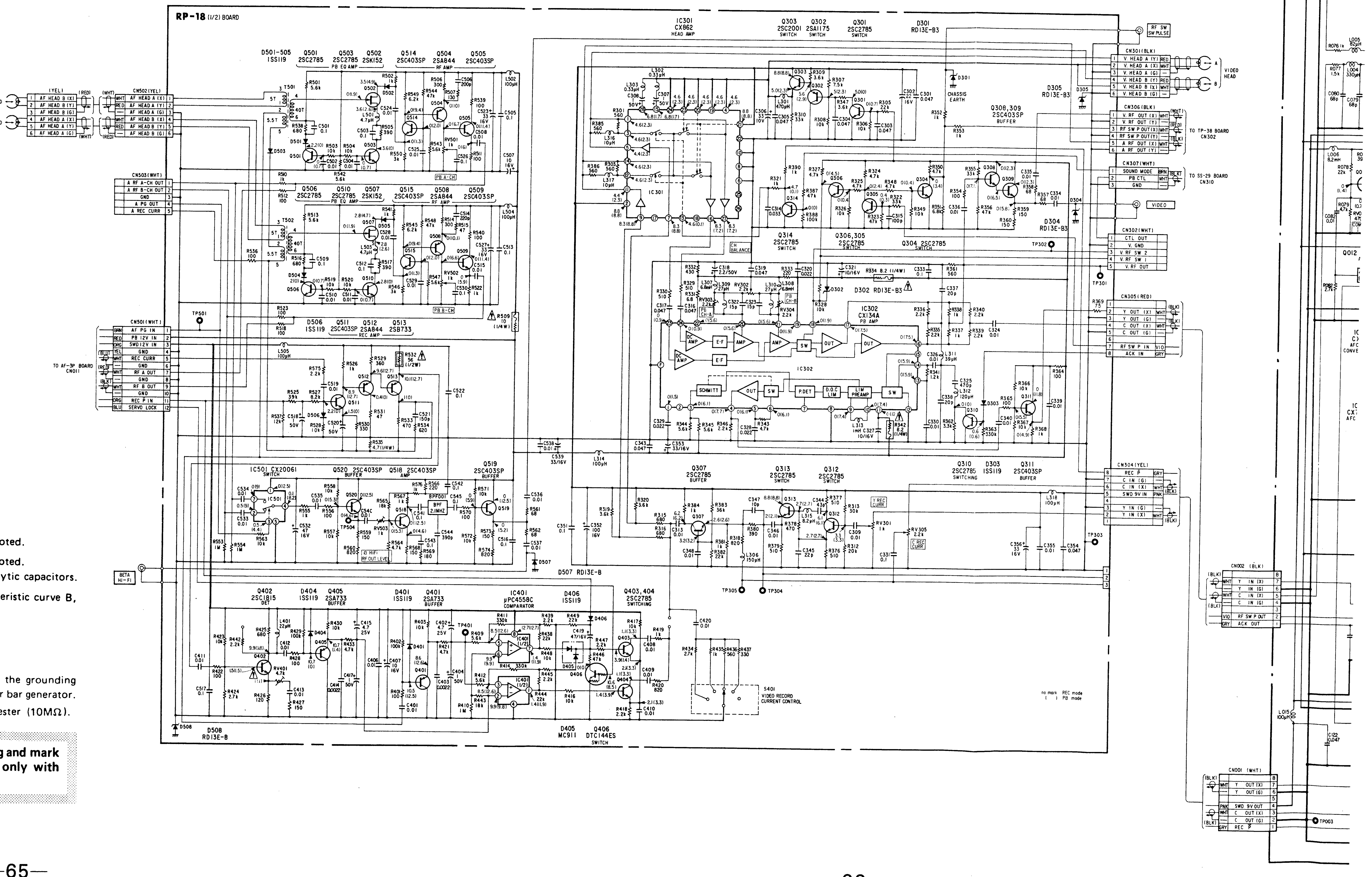


RP-18 BOARD



4-2. RP-18 (1/2) (LOW-CONVERTED CHROMA, Y-FM & AFM SIGNALS RECORD/PLAYBACK AMP, VIDEO RECORD CURRENT CONTROL), RV-7P (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) SCHEMATIC DIAGRAM

– Ref. No. RP-18 BOARD : 2000 series, RV-7P BOARD : 1000 series –

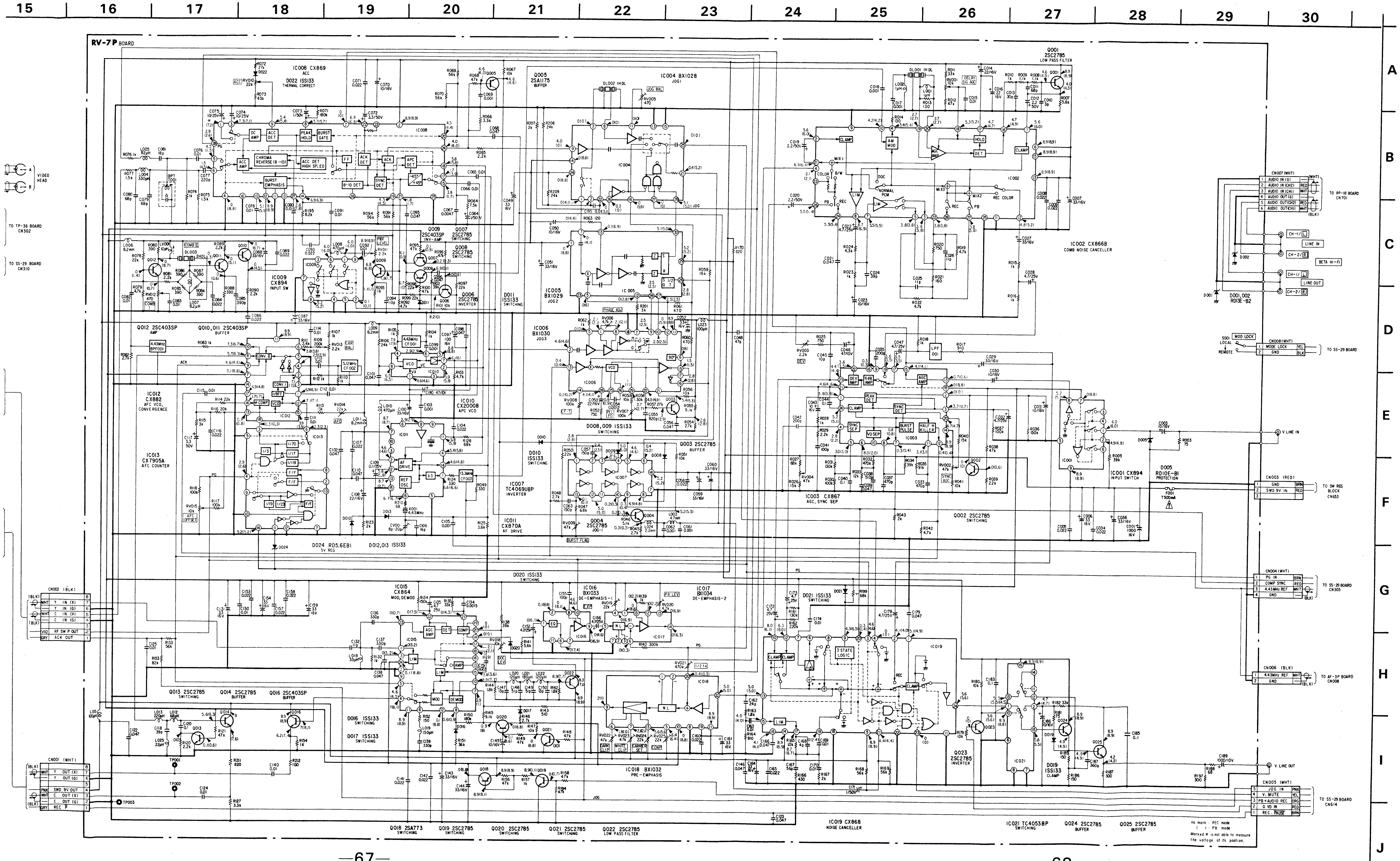

RP-18 (1/2) BOARD
RV-7P BOARD
D501-505 1SS119
Q501 2SC2785
Q503 2SC2785
Q502 2SK152
PB EQ AMP
Q514 2SC403SP
Q504 2SA844
Q505 2SC403SP
RF AMP
Q506 2SC2785
Q510 2SC2785
Q507 2SK152
Q515 2SC403SP
Q508 2SA844
Q509 2SC403SP
D506 1SS119
Q511 2SC403SP
Q512 2SA844
Q513 2SB733
REC AMP
IC501 CX20061 SWITCH
Q520 2SC403SP BUFFER
Q518 2SC403SP AMP
Q519 2SC403SP BUFFER
Q402 2SC1815 DET
D404 1SS119
Q405 2SA733 BUFFER
D401 1SS119
Q401 2SA733 BUFFER
IC401 µPC4558C COMPARATOR
D406 1SS119
Q403,404 2SC2785 SWITCHING
D405 MC911
Q406 DTC144ES SWITCH
D508 RD13E-B
D507 RD13E-B
IC301 CX862 HEAD AMP
Q303 2SC2001 SWITCH
Q302 2SA1175 SWITCH
Q301 2SC2785 SWITCH
D301 RD13E-B3
D305 RD13E-B3
Q308,309 2SC403SP BUFFER
Q314 2SC2785 SWITCH
Q306,305 2SC2785 SWITCH
Q304 2SC2785 SWITCH
D304 RD13E-B3
D302 RD13E-B3
IC302 CX134A PB AMP
Q307 2SC2785 BUFFER
Q313 2SC2785 SWITCH
Q312 2SC2785 SWITCH
Q310 2SC2785 SWITCHING
D303 1SS119
Q311 2SC403SP BUFFER
AF HEAD B
AF HEAD A
CN502
CN503
CN501
TO AF-3P BOARD CN011
BETA HI-FI
CN301
VIDEO HEAD
CN306
TO TP-38 BOARD CN302
CN307
TO SS-29 BOARD CN310
VIDEO
CN302
CN305
CN304
CN002
CN001
S401 VIDEO RECORD CURRENT CONTROL
TP301
TP302
TP303
TP304
TP305
TP401
TP501
TP504
TP003
CHASSIS EARTH

Note:

- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in µF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : Nonflammable resistor
- ▭ : Fusible resistor
- —— : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10MΩ).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

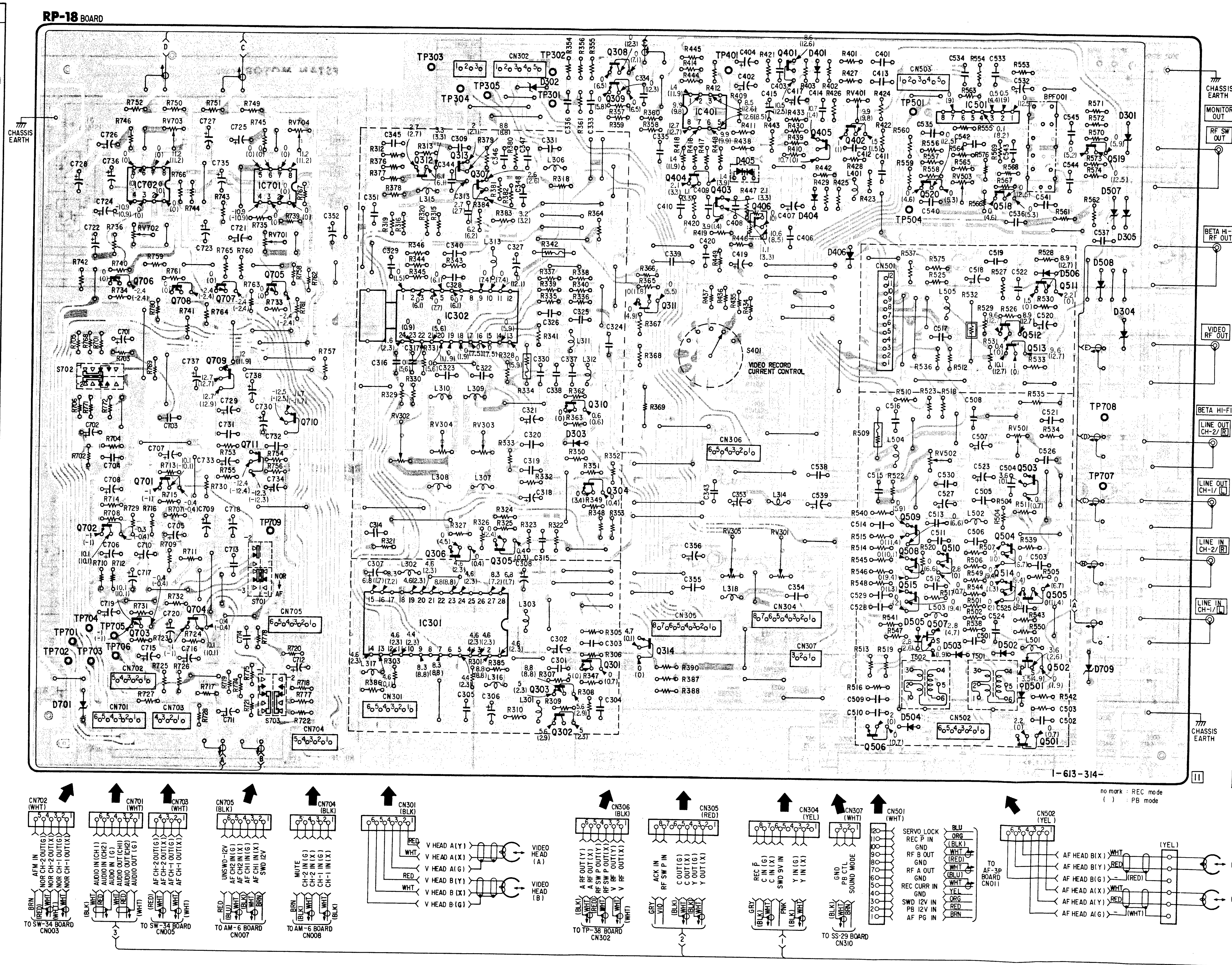

15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
A
B
C
D
E
F
G
H
I
J
RV-7P BOARD
IC008 CX869 ACC
D022 1SS133 THERMAL CORRECT
Q005 2SA1175 BUFFER
IC004 BX1028 JOG1
Q001 2SC2785 LOW PASS FILTER
VIDEO HEAD
TO TP-38 BOARD CN302
TO SS-29 BOARD CN310
Q009 2SC403SP INV-AMP
Q007 2SC2785 SWITCHING
Q008 2SC2785 SWITCHING
Q006 2SC2785 INVERTER
IC009 CX894 INPUT SW
D011 1SS133 SWITCHING
IC005 BX1029 JOG2
IC002 CX866B COMB NOISE CANCELLER
TO RP-18 BOARD CN701
CN007 (WHT)
AUDIO IN (G)
AUDIO IN (CH2)
AUDIO IN (CH1)
AUDIO OUT (G)
AUDIO OUT (CH2)
AUDIO OUT (CH1)
CH-1/L
LINE IN
CH-2/R
BETA HI-FI
LINE OUT
D001,002 RD13E-B2
Q012 2SC403SP AMP
Q010,011 2SC403SP BUFFER
IC006 BX1030 JOG3
S001 LOCAL REMOTE
MODE LOCK
CN008 (WHT)
TO SS-29 BOARD
IC012 CX882 AFC VCO, CONVERGENCE
IC010 CX20008 APC VCO
D008,009 1SS133 SWITCHING
Q003 2SC2785 BUFFER
IC013 CX7905A AFC COUNTER
D010 1SS133 SWITCHING
IC007 TC4069UBP INVERTER
IC001 CX894 INPUT SWITCH
D005 RD10E-B1 PROTECTION
F001 T500mA
V.LINE IN
CN003 (RED)
GND
SW9 9V IN
TO SW REG BLOCK CN653
IC011 CX870A AF DRIVE
Q004 2SC2785 JOG-1
IC003 CX867 AGC, SYNC SEP
Q002 2SC2785 SWITCHING
D024 RD5.6EB1 5V REG
D012,013 1SS133
D020 1SS133 SWITCHING
IC015 CX864 MOD, DEMOD
IC016 BX1033 DE-EMPHASIS-1
IC017 BX1034 DE-EMPHASIS-2
D021 1SS133 SWITCHING
CN004 (WHT)
PG IN
COMP SYNC
4.43MHz REF
TO SS-29 BOARD CN305
CN002 (BLK)
Y IN (X)
Y IN (G)
C IN (G)
C IN (X)
RF SW P OUT
ACK OUT
Q013 2SC2785 SWITCHING
Q014 2SC2785 BUFFER
Q016 2SC403SP BUFFER
D016 1SS133 SWITCHING
D017 1SS133 SWITCHING
IC018 BX1032 PRE-EMPHASIS
IC019
CN006 (BLK)
4.43MHz REF
TO AF-3P BOARD CN008
CN001 (WHT)
Y OUT (X)
Y OUT (G)
SWD 9V OUT
C OUT (X)
C OUT (G)
REC P
TP001
TP002
TP003
V.LINE OUT
CN005 (WHT)
JOG IN
V.MUTE
PB+AUDIO REC
G VD IN
REC. PAUSE
TO SS-29 BOARD CN614
Q018 2SA773 SWITCHING
Q019 2SC2785 SWITCHING
Q020 2SC2785 SWITCHING
Q021 2SC2785 SWITCHING
Q022 2SC2785 LOW PASS FILTER
IC019 CX868 NOISE CANCELLER
Q023 2SC2785 INVERTER
D019 1SS133 CLAMP
IC021 TC4053BP SWITCHING
Q024 2SC2785 BUFFER
Q025 2SC2785 BUFFER
no mark : REC mode
( ) : PB mode
Marked * is not able to measure the voltage of its position.

RP-18 (1/2) (LOW-CONVERTED CHROMA, Y-FM & AFM SIGNALS RECORD/PLAYBACK AMP, VIDEO RECORD CURRENT CONTROL), ι CHROMA SIGNALS RV-7P (Y & CHROMA SIGNALS RECORD/PLAYBACK PROCESS) PRINTED WIRING BOARDS

– Ref. No. RP-18 BOARD : 2000 series, RV-7P BOARD : 1000 series –

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

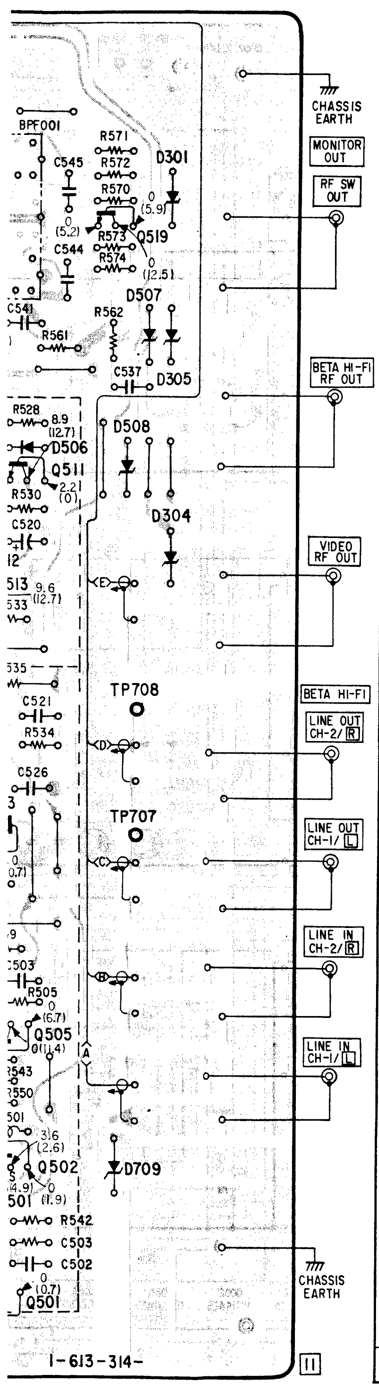
	Q , IC	D	ADJ,TP
A	308, 401 309, 402, 519 405	401 302	TP303 TP302 TP401 TP301 TP501
B	IC401, IC501 312, 313, 307 404, 520 403, 518 406 IC702, IC701	301 405	TP305 TP304 RV401 RV703 RV704 RV503
C	511 706, 708, 707, 705	404 507 305 406 506 508	TP504 RV702 RV701
D	311 IC302 512 513 709	304	
E	310 710 711 701, 304, 503	303	TP708 RV302 RV304 RV303 RV501 TP707 RV502
F	509 702 508, 510 306, 305, 504 515, 514 505		TP709 RV305 RV301
G	IC301 703, 704, 314 507 502 301 303 302	505 503 502 709 501	TP704 TP705 TP701 TP706 TP702 TP703
H	506 501	701 504	
	Q , IC	D	ADJ,TP


RP-18 BOARD
CHASSIS EARTH
TP303
TP302
TP305
TP304
TP301
TP401
TP501
TP504
TP708
TP707
TP709
TP704
TP705
TP701
TP702
TP703
TP706
IC702
IC701
IC302
IC301
IC401
IC501
S401
VIDEO RECORD CURRENT CONTROL
S702
S701
S703
NOR
AF
BPF001
CN301
CN302
CN304
CN305
CN306
CN307
CN501
CN502
CN503
CN701
CN702
CN703
CN704
CN705
MONITOR OUT
RF SW OUT
BETA HI-FI RF OUT
VIDEO RF OUT
BETA HI-FI
LINE OUT CH-2/R
LINE OUT CH-1/L
LINE IN CH-2/R
LINE IN CH-1/L
1-613-314-
11
CN702 (WHT)
AFM IN
NOR CH-2 OUT(G)
NOR CH-2 OUT(X)
NOR CH-1 OUT(G)
NOR CH-1 OUT(X)
TO SW-34 BOARD CN003
CN701 (WHT)
AUDIO IN (CH1)
AUDIO IN (CH2)
AUDIO IN (G)
AUDIO OUT (CH1)
AUDIO OUT (CH2)
AUDIO OUT (G)
CN703 (WHT)
AF CH-2 OUT(G)
AF CH-2 OUT(X)
AF CH-1 OUT(G)
AF CH-1 OUT(X)
TO SW-34 BOARD CN005
CN705 (BLK)
UNSWD-12V
AF CH2 IN(G)
AF CH2 IN(X)
AF CH1 IN(G)
AF CH1 IN(X)
SWD 12V
TO AM-6 BOARD CN007
CN704 (BLK)
MUTE
CH-2 IN(G)
CH-2 IN(X)
CH-1 IN(G)
CH-1 IN(X)
TO AM-6 BOARD CN008
CN301 (BLK)
V HEAD A(Y)
V HEAD A(X)
V HEAD A(G)
V HEAD B(Y)
V HEAD B(X)
V HEAD B(G)
VIDEO HEAD (A)
VIDEO HEAD (B)
CN306 (BLK)
A RF OUT(Y)
A RF OUT(X)
RF SW P OUT(Y)
RF SW P OUT(X)
V RF OUT(Y)
V RF OUT(X)
TO TP-38 BOARD CN302
CN305 (RED)
ACK IN
RF SW P IN
C OUT(G)
C OUT(X)
Y OUT(G)
Y OUT(X)
CN304 (YEL)
REC P̄
C IN (G)
C IN (X)
SWD 9V IN
Y IN (G)
Y IN (X)
CN307 (WHT)
GND
PB CTL
SOUND MODE
TO SS-29 BOARD CN310
CN501 (WHT)
SERVO LOCK
REC P̄ IN
GND
RF B OUT
GND
RF A OUT
GND
REC CURR IN
GND
SWD 12V IN
PB 12V IN
AF PG IN
TO AF-3P BOARD CN011
CN502 (YEL)
AF HEAD B(X)
AF HEAD B(Y)
AF HEAD B(G)
AF HEAD A(X)
AF HEAD A(Y)
AF HEAD A(G)
AF HEAD (B)
AF HEAD (A)

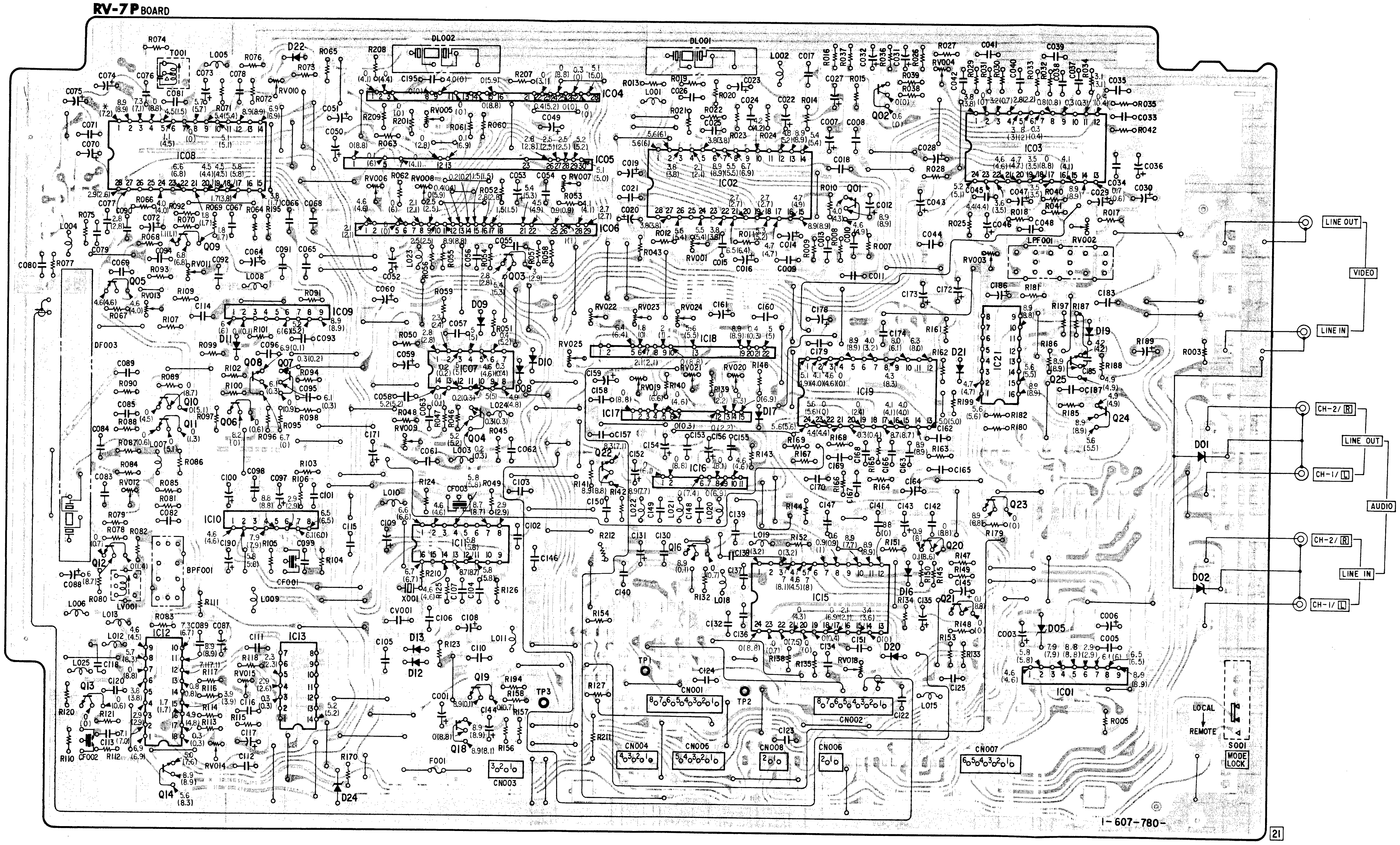
no mark : REC mode
( ) : PB mode

	Q , IC	D	ADJ,TP
A		22	RV004
B	02 IC04 IC05 IC03 IC08 IC02		RV010 RV005
C	01 IC06 09 03 05		RV006 RV008 RV007 RV002 RV003 RV001 RV011
D	IC09 IC18 IC07 08, 07 IC21 IC17, IC19 10, 06, 25 11, 04 24	09 11 19 10 08 21 17	RV013 RV022 RV023 RV024 RV025 RV019 RV021 RV020
E	22, IC16 23 IC10	01	RV009 RV012
F	12 IC11, 16, 20 IC15, 21	16 02 05	
G	13 IC13 19 IC12 IC01 18	13, 20 12	TP1 RV018 RV015 TP2 TP3 RV014
H	14	24	
	Q , IC	D	ADJ,TP

13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29

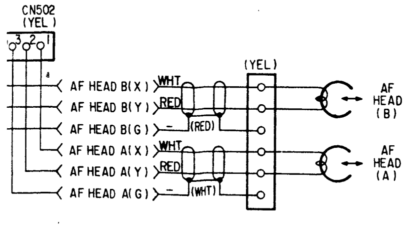

CHASSIS EARTH
MONITOR OUT
RF SW OUT
BETA HI-FI RF OUT
VIDEO RF OUT
BETA HI-FI
LINE OUT CH-2/R
LINE OUT CH-1/L
LINE IN CH-2/R
LINE IN CH-1/L
CHASSIS EARTH
TP708
TP707
BPF001
D301
D305
D304
D507
D508
D709
Q519
Q511
Q505
Q502
Q501
1-613-314-
11

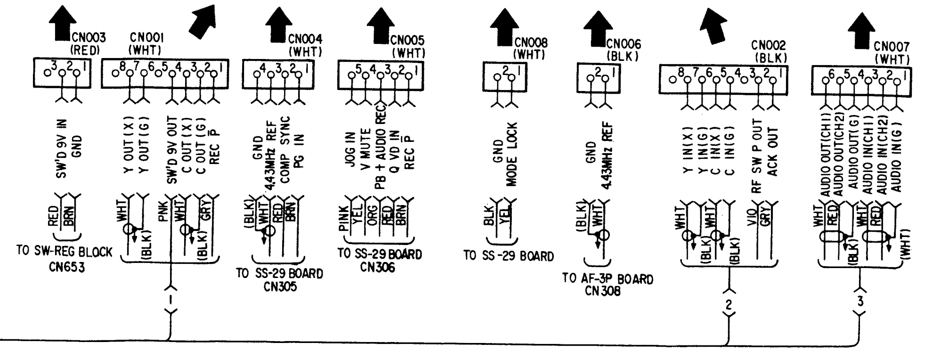
Q, IC	D	ADJ,TP
	22	
		RV004
02		RV010
IC04		
IC05		RV005
IC03		
IC08 IC02		
		RV006
01		RV008
		RV007
IC06		
		RV002
09		RV003
		RV001
03		RV011
05		
IC09		RV013
	09	RV022
IC18	11	RV023
IC07		RV024
08, 07	19	RV025
IC21	10	
IC17, IC19	08	
10, 06, 25	21	RV019
11, 04	17	RV021
24		RV020
		RV009
	01	
22, IC16		
23		
		RV012
IC10		
12		
IC11, 16, 20		
IC15, 21	16	
	02	
	05	
	13, 20	
	12	TP1
		RV018
13 IC13 19		RV015
IC12		TP2
IC01		TP3
18		RV014
14		
	24	
Q, IC	D	ADJ,TP


RV-7P BOARD
DL002
DL001
IC04
IC05
IC08
IC02
IC06
IC03
IC09
IC18
IC07
IC17
IC19
IC21
IC16
IC10
IC11
IC15
IC12
IC13
IC01
LINE OUT
VIDEO
LINE IN
CH-2/R
LINE OUT
CH-1/L
AUDIO
CH-2/R
LINE IN
CH-1/L
D01
D02
LOCAL
REMOTE
S001
MODE LOCK
CN001
CN002
CN003
CN004
CN006
CN007
CN008
TP1
TP2
TP3
1-607-780-
21

no mark : REC mode
( ) : PB mode

no mark : REC mode.
( ) : PB mode.
Marked * is not able measure the voltage of it's position


CN502
(YEL)
AF HEAD B(X)
AF HEAD B(Y)
AF HEAD B(G)
AF HEAD A(X)
AF HEAD A(Y)
AF HEAD A(G)
WHT
RED
(RED)
WHT
RED
(WHT)
(YEL)
AF HEAD (B)
AF HEAD (A)

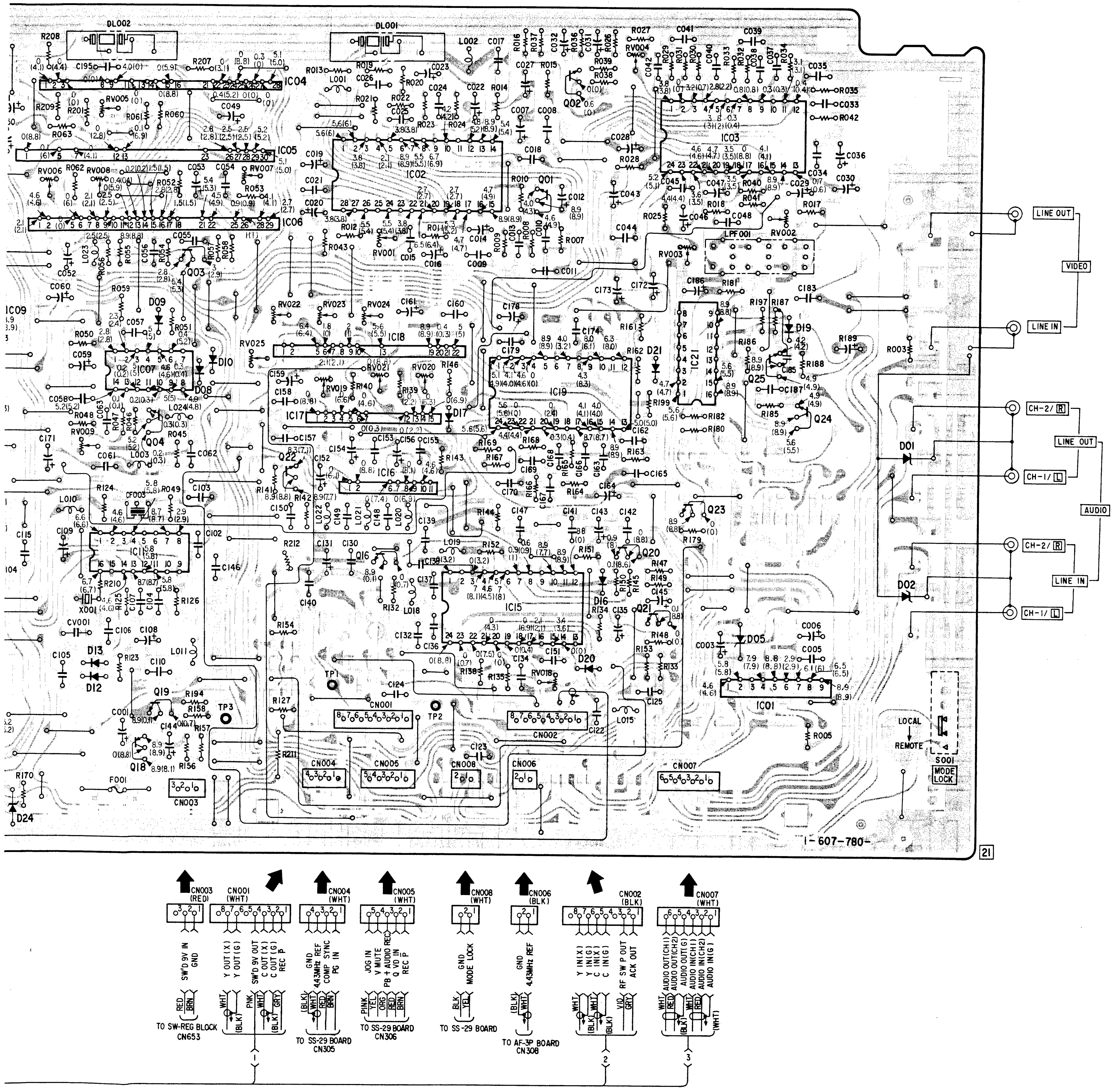

CN003 (RED)
SW'D 9V IN
GND
RED
BRN
TO SW-REG BLOCK CN653
CN001 (WHT)
Y OUT (X)
Y OUT (G)
SW'D 9V OUT
C OUT (X)
C OUT (G)
REC P̄
WHT
(BLK)
PNK
WHT
(BLK)
GRY
1
CN004 (WHT)
GND
4.43MHz REF
COMP SYNC
PG IN
(BLK)
WHT
RED
BRN
TO SS-29 BOARD CN305
CN005 (WHT)
JOG IN
V MUTE
PB + AUDIO REC
Q VD IN
REC P̄
PINK
YEL
ORG
RED
BRN
TO SS-29 BOARD CN306
CN008 (WHT)
GND
MODE LOCK
BLK
YEL
TO SS-29 BOARD
CN006 (BLK)
GND
4.43MHz REF
(BLK)
WHT
TO AF-3P BOARD CN308
CN002 (BLK)
Y IN(X)
Y IN(G)
C IN(X)
C IN(G)
RF SW P OUT
ACK OUT
WHT
(BLK)
WHT
(BLK)
VIO
GRY
2
CN007 (WHT)
AUDIO OUT(CH1)
AUDIO OUT(CH2)
AUDIO OUT(G)
AUDIO IN(CH1)
AUDIO IN(CH2)
AUDIO IN(G)
WHT
RED
(BLK)
WHT
RED
(WHT)
3

20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

A B C D E F G H I J

Note:

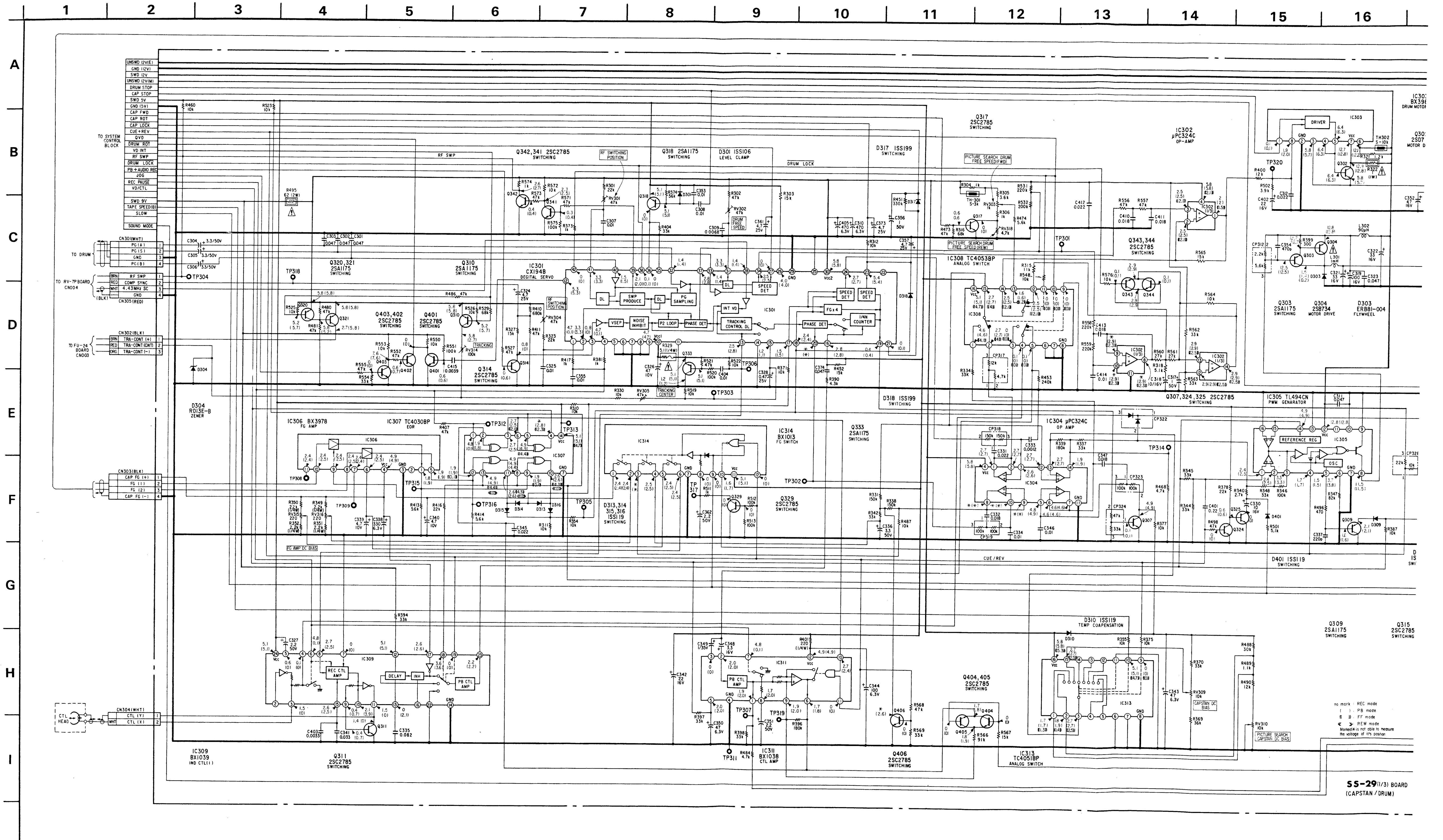
- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- : soldering side
- : B+ pattern


LINE OUT
VIDEO
LINE IN
CH-2/R
CH-1/L
LINE OUT
AUDIO
LINE IN
D01
D02
LOCAL
REMOTE
S001
MODE LOCK
1-607-780-
21
TP1
TP2
TP3
CN003 (RED)
SW'D 9V IN
GND
RED
BRN
TO SW-REG BLOCK CN653
CN001 (WHT)
Y OUT (X)
Y OUT (G)
SW'D 9V OUT
C OUT (X)
C OUT (G)
REC P̄
WHT
(BLK)
PNK
WHT
(BLK)
GRY
CN004 (WHT)
GND
4.43MHz REF
COMP SYNC
PG IN
(BLK)
WHT
RED
BRN
TO SS-29 BOARD CN305
CN005 (WHT)
JOG IN
V MUTE
PB + AUDIO REC
Q VD IN
REC P̄
PINK
YEL
ORG
RED
BRN
TO SS-29 BOARD CN306
CN008 (WHT)
GND
MODE LOCK
BLK
YEL
TO SS-29 BOARD
CN006 (BLK)
GND
4.43MHz REF
(BLK)
WHT
TO AF-3P BOARD CN308
CN002 (BLK)
Y IN (X)
Y IN (G)
C IN (X)
C IN (G)
RF SW P OUT
ACK OUT
WHT
(BLK)
WHT
(BLK)
VIO
GRY
CN007 (WHT)
AUDIO OUT (CH1)
AUDIO OUT (CH2)
AUDIO OUT (G)
AUDIO IN (CH1)
AUDIO IN (CH2)
AUDIO IN (G)
WHT
RED
(BLK)
WHT
RED
(WHT)
1
2
3

When indicating parts by reference number, please include the board name.

4-3. SS-29 (CAPSTAN/DRUM SERVO, REEL SERVO), CAPSTAN MOTOR, REEL MOTOR SCHEMATIC DIAGRAM

– Ref. No. SS-29 BOARD : 4000 series –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A
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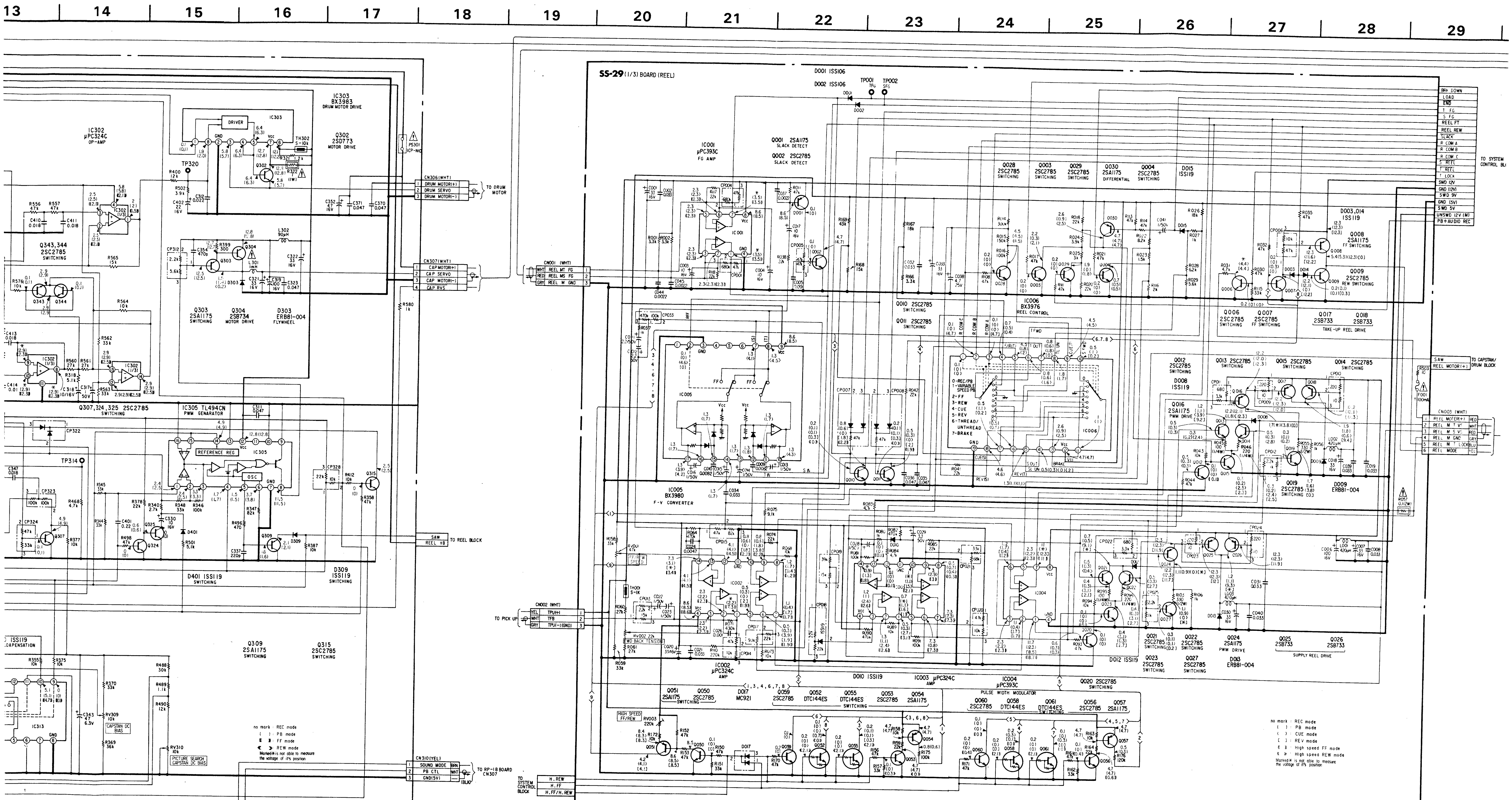
G
H
I
J
TO SYSTEM CONTROL BLOCK
UNSWD 12V(E)
GND (12V)
SWD 12V
UNSWD 12V(M)
DRUM STOP
CAP STOP
SWD 5V
GND (5V)
CAP FWD
CAP ROT
CAP LOCK
CUE+REV
QVD
DRUM ROT
VD INT
RF SWP
DRUM LOCK
PB+AUDIO REC
JOG
REC PAUSE
VD/CTL
SWD 9V
TAPE SPEED(B)
SLOW
SOUND MODE
TO DRUM
CN301(WHT)
PG(A)
PG(S)
GND
PG(B)
TO RV-TP BOARD CN004
CN305(RED)
RF SWP
COMP SYNC
4.43MHz SC
GND
TP304
TO FU-24 BOARD CN003
CN302(BLK)
TRA-CONT(+)
TRA-CONT(CNT)
TRA-CONT(−)
D304 RD13E-B ZENER
CN303(BLK)
CAP FG(+)
FG(1)
FG(2)
CAP FG(−)
CTL HEAD
CN304(WHT)
CTL(Y)
CTL(X)
Q342,341 2SC2785 SWITCHING
RF SWITCHING POSITION
Q318 2SA1175 SWITCHING
D301 1SS106 LEVEL CLAMP
DRUM LOCK
D317 1SS199 SWITCHING
Q317 2SC2785 SWITCHING
PICTURE SEARCH DRUM FREE SPEED(FWD)
PICTURE SEARCH DRUM FREE SPEED(REW)
IC302 μPC324C OP-AMP
IC303
DRIVER
TP320
TH302
IC302 BX398 DRUM MOTOR
Q320,321 2SA1175 SWITCHING
Q310 2SA1175 SWITCHING
IC301 CX1948 DEGITAL SERVO
TP318
DL
SWP PRODUCE
PG SAMPLING
SPEED DET
INT VD
VSEP
NOISE INHIBIT
P2 LOOP
PHASE DET
TRACKING CONTROL DL
FG×4
1/4N COUNTER
Q403,402 2SC2785 SWITCHING
Q401 2SC2785 SWITCHING
Q314 2SC2785 SWITCHING
TRACKING
TRACKING CENTER
TP306
TP303
Q333
IC308 TC4053BP ANALOG SWITCH
TP301
Q343,344 2SC2785 SWITCHING
Q303 2SA1175 SWITCHING
Q304 2SB734 MOTOR DRIVE
D303 ERB81-004 FLYWHEEL
D318 1SS199 SWITCHING
Q307,324,325 2SC2785 SWITCHING
IC306 BX3978 FG AMP
IC307 TC4030BP EOR
TP312
TP313
TP308
TP315
TP316
TP309
FG AMP DC BIAS
IC314 BX1013 FG SWITCH
D313,314 315,316 1SS119 SWITCHING
TP305
TP317
Q333 2SA1175 SWITCHING
Q329 2SC2785 SWITCHING
TP302
IC304 μPC324C OP AMP
TP314
IC305 TL494CN PWM GENARATOR
REFERENCE REG
OSC
D401 1SS119 SWITCHING
CUE/REV
IC309
REC CTL AMP
DELAY
INH
PB CTL AMP
IC311
PB CTL AMP
TP307
TP319
TP311
D310 1SS119 TEMP COMPENSATION
IC313
CAPSTAN DC BIAS
PICTURE SEARCH CAPSTAN DC BIAS
Q404,405 2SC2785 SWITCHING
Q309 2SA1175 SWITCHING
Q315 2SC2785 SWITCHING
IC309 BX1039 IND CTL(I)
Q311 2SC2785 SWITCHING
IC311 BX1038 CTL AMP
Q406 2SC2785 SWITCHING
IC313 TC4051BP ANALOG SWITCH

no mark : REC mode
( ) : PB mode
((( ))) : FF mode
« » : REW mode
Marked* is not able to measure the voltage of it's position

SS-29(1/3) BOARD
(CAPSTAN/DRUM)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SS-29 (1/3) BOARD (REEL)
SS-29 (1/3) BOARD (CAPSTAN/DRUM)
IC302 μPC324C OP-AMP
IC303 BX3983 DRUM MOTOR DRIVE
Q302 2SD773 MOTOR DRIVE
Q303 2SA1175 SWITCHING
Q304 2SB734 MOTOR DRIVE
D303 ERB81-004 FLYWHEEL
Q343,344 2SC2785 SWITCHING
Q307,324,325 2SC2785 SWITCHING
IC305 TL494CN PWM GENERATOR
D401 1SS119 SWITCHING
D309 1SS119 SWITCHING
Q309 2SA1175 SWITCHING
Q315 2SC2785 SWITCHING
IC313
CN306 (WHT)
DRUM MOTOR (+)
DRUM SERVO
DRUM MOTOR (−)
TO DRUM MOTOR
CN307 (WHT)
CAP MOTOR (+)
CAP SERVO
CAP MOTOR (−)
CAP RVS
SAW
REEL +B
TO REEL BLOCK
CN310 (YEL)
SOUND MODE
PB CTL
GND (5V)
TO RP-18 BOARD CN307
CN001 (WHT)
REEL MT FG
REEL MS FG
REEL M GND
CN002 (WHT)
TPU (+)
TFB
TPU (−) (GND)
TO PICK UP
IC001 μPC393C FG AMP
Q001 2SA1175 SLACK DETECT
Q002 2SC2785 SLACK DETECT
D001 1SS106
D002 1SS106
TP001 TFG
TP002 SFG
IC005 BX3980 F-V CONVERTER
IC006 BX3976 REEL CONTROL
IC002 μPC324C AMP
IC003 μPC324C AMP
IC004 μPC393C PULSE WIDTH MODULATOR
Q028 2SC2785 SWITCHING
Q003 2SC2785 SWITCHING
Q029 2SC2785 SWITCHING
Q030 2SA1175 DIFFERENTIAL
Q004 2SC2785 SWITCHING
D015 1SS119
D003,014 1SS119
Q008 2SA1175 REW SWITCHING
Q009 2SC2785 REW SWITCHING
Q006 2SC2785 SWITCHING
Q007 2SC2785 FF SWITCHING
Q017 2SB733
Q018 2SB733
TAKE-UP REEL DRIVE
Q010 2SC2785 SWITCHING
Q011 2SC2785 SWITCHING
Q012 2SC2785 SWITCHING
Q013 2SC2785 SWITCHING
Q015 2SC2785 SWITCHING
Q014 2SC2785 SWITCHING
D008 1SS119
Q016 2SA1175 PWM DRIVE
Q019 2SC2785 SWITCHING
D009 ERB81-004
Q021 2SC2785 SWITCHING
Q022 2SC2785 SWITCHING
Q024 2SA1175 PWM DRIVE
Q025 2SB733
Q026 2SB733
SUPPLY REEL DRIVE
Q023 2SC2785 SWITCHING
Q027 2SC2785 SWITCHING
D013 ERB81-004
D012 1SS119
D010 1SS119
Q020 2SC2785 SWITCHING
Q051 2SA1175
Q050 2SC2785
D017 MC921
Q059 2SC2785
Q052 DTC144ES
Q055 DTC144ES
Q053 2SC2785
Q054 2SA1175
SWITCHING
Q060 2SC2785
Q058 DTC144ES
Q061 DTC144ES
Q056 2SC2785
Q057 2SA1175
SWITCHING
0-REC/PB
1-VARIABLE SPEED PB
2-FF
3-REW
4-CUE
5-REV
6-THREAD/UNTHREAD
7-BRAKE
BRK DOWN
LOAD
END
T FG
S FG
REEL FT
REEL REW
SLACK
R COM A
R COM B
R COM C
S REEL
T REEL
T LOCK
SWD 12V
GND (12V)
SWD 9V
GND (5V)
SWD 5V
UNSWD 12V (M)
PB+AUDIO REC
TO SYSTEM CONTROL BL
SAW
REEL MOTOR (+)
TO CAPSTAN/DRUM BLOCK
CN003 (WHT)
REEL MOTER (+)
REEL M "V"
REEL M S"V"
REEL M GND
REEL M LOCK
REEL MODE
TO SYSTEM CONTROL BLOCK
H.REW
H.FF
H.FF/H.REW
HIGH SPEED FF/REW
RV002 BACK TENSION
PICTURE SEARCH CAPSTAN DC BIAS
CAPSTAN DC BIAS
no mark : REC mode
( ) : PB mode
[ ] : FF mode
≪ ≫ : REW mode
Marked * is not able to measure the voltage of it's position
no mark : REC mode
( ) : PB mode
{ } : CUE mode
〈 〉 : REV mode
[ ] : High speed FF mode
≪ ≫ : High speed REW mode
Marked * is not able to measure the voltage of it's position

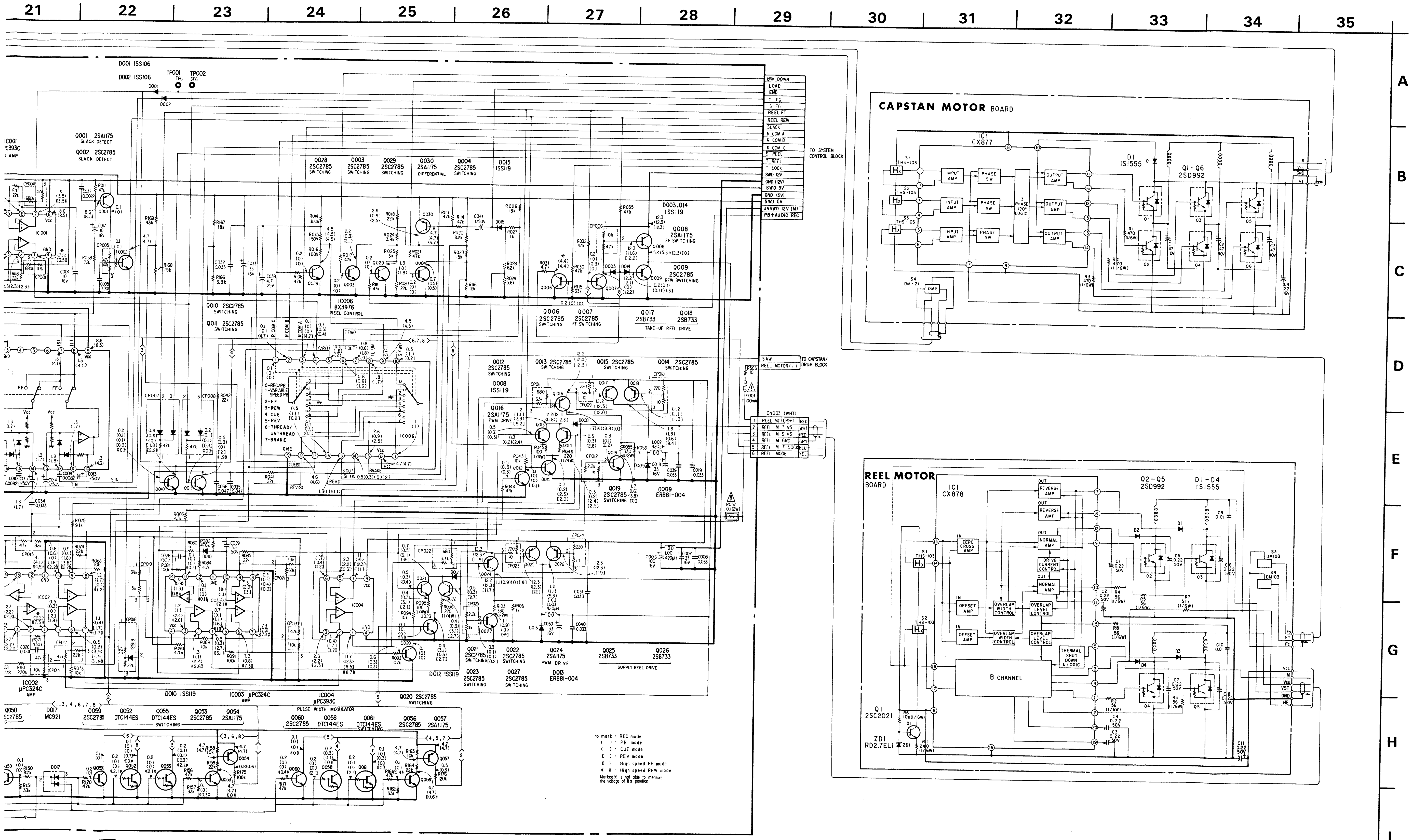
Note:

- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.

- ▭ : Nonflammable resistor
- ∿ : Fusible resistor
- —— : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10MΩ).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating p
ence number, pl
the board name.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J
D001 1SS106
D002 1SS106
TP001 TFG
TP002 SFG
Q001 2SA1175 SLACK DETECT
Q002 2SC2785 SLACK DETECT
IC001 μPC393C AMP
Q028 2SC2785 SWITCHING
Q003 2SC2785 SWITCHING
Q029 2SC2785 SWITCHING
Q030 2SA1175 DIFFERENTIAL
Q004 2SC2785 SWITCHING
D015 1SS119
D003,014 1SS119
Q008 2SA1175 FF SWITCHING
Q009 2SC2785 REW SWITCHING
Q010 2SC2785 SWITCHING
Q011 2SC2785 SWITCHING
IC006 BX3976 REEL CONTROL
Q006 2SC2785 SWITCHING
Q007 2SC2785 FF SWITCHING
Q017 2SB733
Q018 2SB733
TAKE-UP REEL DRIVE
TO SYSTEM CONTROL BLOCK
BRK DOWN
LOAD
END
T FG
S FG
REEL FT
REEL REW
SLACK
R COM A
R COM B
R COM C
S REEL
T REEL
T LOCK
SWD 12V
GND (12V)
SWD 9V
GND (5V)
SWD 5V
UNSWD 12V (M)
PB+AUDIO REC
0-REC/PB
1-VARIABLE SPEED PB
2-FF
3-REW
4-CUE
5-REV
6-THREAD/UNTHREAD
7-BRAKE
Q012 2SC2785 SWITCHING
D008 1SS119
Q013 2SC2785 SWITCHING
Q015 2SC2785 SWITCHING
Q014 2SC2785 SWITCHING
Q016 2SA1175 PWM DRIVE
Q019 2SC2785 SWITCHING
D009 ERB81-004
SAW
REEL MOTOR(+)
TO CAPSTAN/DRUM BLOCK
CN003 (WHT)
REEL MOTER(+)
REEL M T VS
REEL M S VS
REEL M GND
REEL M T LOCK
REEL MODE
RED
WHT
RED
GRY
BLU
YEL
IC002 μPC324C AMP
IC003 μPC324C AMP
IC004 μPC393C PULSE WIDTH MODULATOR
D010 1SS119
D017 MC921
Q050 2SC2785
Q059 2SC2785
Q052 DTC144ES
Q055 DTC144ES
Q053 2SC2785
Q054 2SA1175
SWITCHING
Q060 2SC2785
Q058 DTC144ES
Q061 DTC144ES
Q056 2SC2785
Q057 2SA1175
SWITCHING
Q020 2SC2785 SWITCHING
Q021 2SC2785 SWITCHING
Q022 2SC2785 SWITCHING
Q023 2SC2785 SWITCHING
Q027 2SC2785 SWITCHING
Q024 2SA1175 PWM DRIVE
D013 ERB81-004
D012 1SS119
Q025 2SB733
Q026 2SB733
SUPPLY REEL DRIVE
no mark : REC mode
( ) : PB mode
( ) : CUE mode
[ ] : REV mode
《 》 High speed FF mode
《 》 High speed REW mode
Marked ✳ is not able to measure the voltage of it's position
CAPSTAN MOTOR BOARD
IC1 CX877
INPUT AMP
PHASE SW
3 PHASE 120° LOGIC
OUTPUT AMP
D1 1S1555
Q1-Q6 2SD992
S1 THS-103
S2 THS-103
S3 THS-103
S4 DM-21
REEL MOTOR BOARD
IC1 CX878
REVERSE AMP
NORMAL AMP
ZERO CROSS AMP
DRIVE CURRENT CONTROL
OFFSET AMP
OVERLAP WIDTH CONTROL
OVERLAP LEVEL CONTROL
THERMAL SHUT DOWN & LOGIC
B CHANNEL
Q2-Q5 2SD992
D1-D4 1S1555
Q1 2SC2021
ZD1 RD2.7EL1
S3 DM103
S4 DM103

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capacitors.

ic curve B,

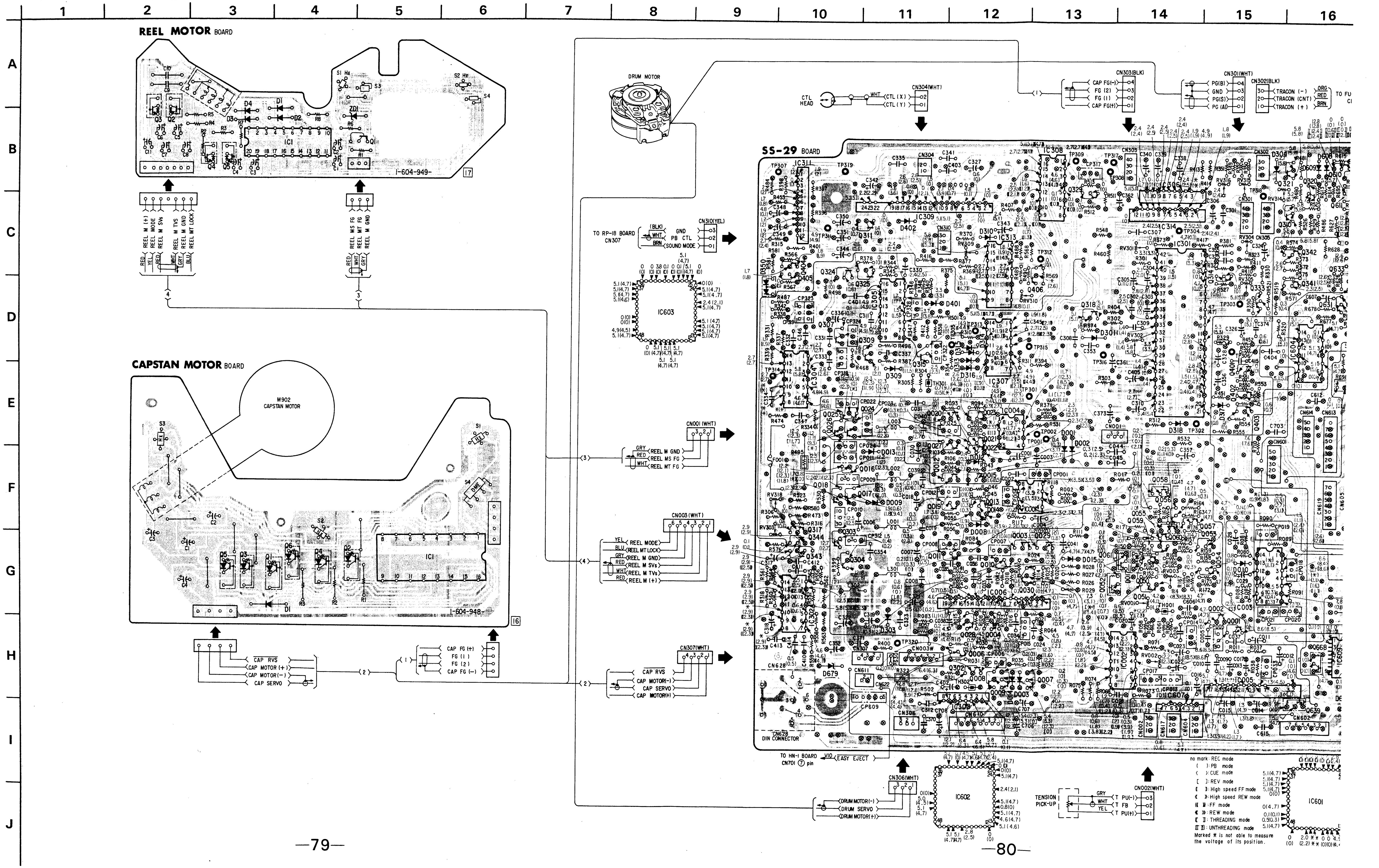
- : Nonflammable resistor
- : Fusible resistor
- —— : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10MΩ).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SS-29 (CAPSTAN/DRUM SERVO, REEL SERVO), CAPSTAN MOTOR, REEL MOTOR PRINTED WIRING BOARDS

– Ref. No. SS-29 BOARD : 4000 series –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A
B
C
D
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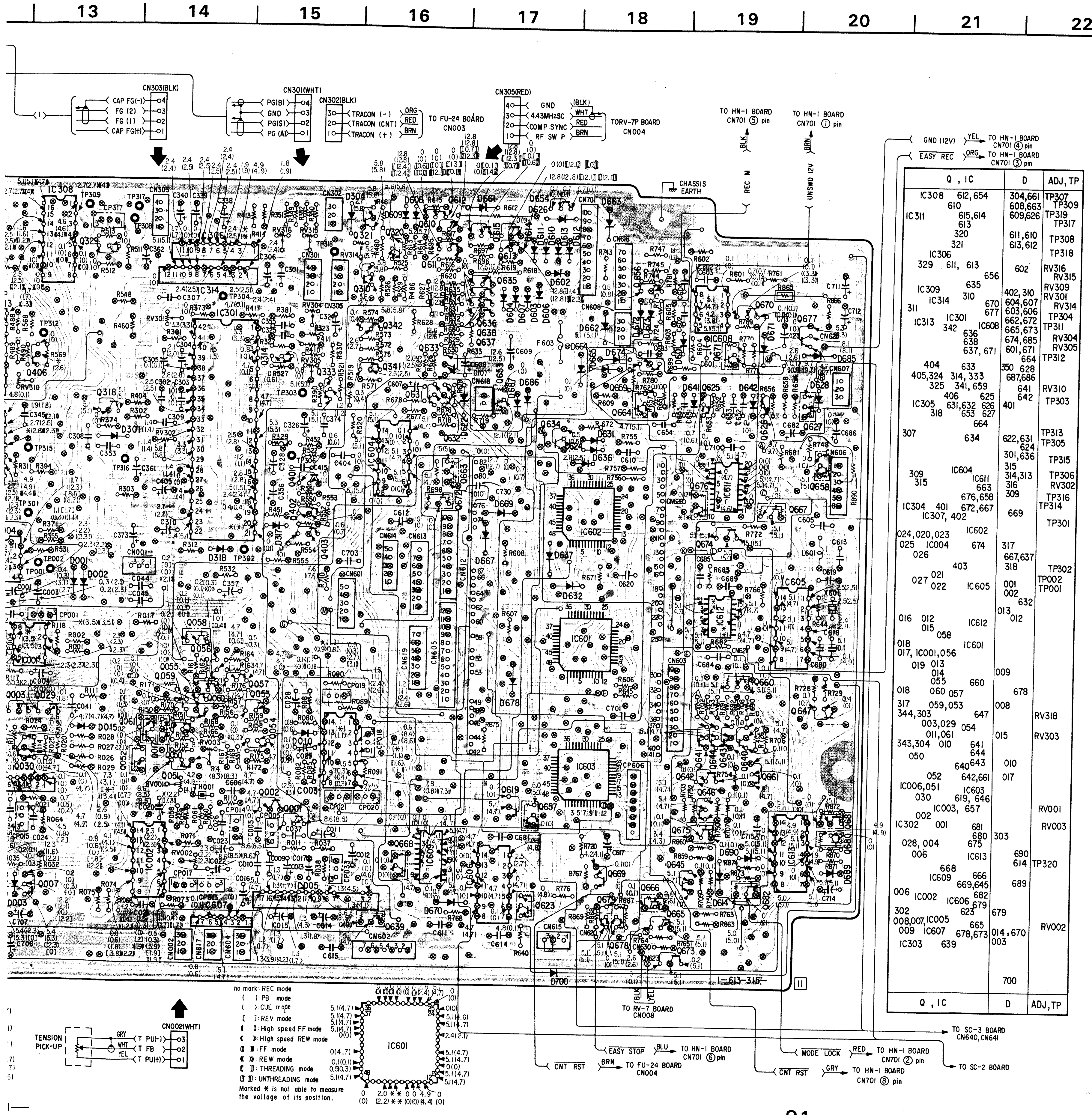
F
G
H
I
J
REEL MOTOR BOARD
1-604-949-
17
REEL M (+)
REEL M MODE
REEL M SVs
REEL M TVs
REEL M GND
REEL MT LOCK
REEL MS FG
REEL MT FG
REEL M GND
CAPSTAN MOTOR BOARD
M902
CAPSTAN MOTOR
IC1
1-604-948-
16
CAP RVS
CAP MOTOR (+)
CAP MOTOR (−)
CAP SERVO
CAP FG (+)
FG (1)
FG (2)
CAP FG (−)
DRUM MOTOR
CTL HEAD
CN304(WHT)
CTL (X)
CTL (Y)
CN303(BLK)
CN301(WHT)
CN302(BLK)
PG(B)
GND
PG(S)
PG (A)
TRACON (−)
TRACON (CNT)
TRACON (+)
TO RP-18 BOARD CN307
CN310(YEL)
GND
PB CTL
SOUND MODE
IC603
CN001(WHT)
CN003(WHT)
REEL MODE
REEL MT LOCK
REEL M GND
REEL M SVs
REEL M TVs
REEL M (+)
CN307(WHT)
SS-29 BOARD
IC602
IC601
CN306(WHT)
DRUM MOTOR(−)
DRUM SERVO
DRUM MOTOR(+)
TENSION PICK-UP
CN002(WHT)
T PU(−)
T FB
T PU(+)
TO HN-1 BOARD CN701 ⑦ pin
EASY EJECT
CN628 DIN CONNECTOR

no mark : REC mode
( ) : PB mode
〈 〉 : CUE mode
[ ] : REV mode
《 》 : High speed FF mode
《 》 : High speed REW mode
《《 》》 : FF mode
《 》》 : REW mode
【 】 : THREADING mode
【【 】】 : UNTHREADING mode
Marked ∗ is not able to measure the voltage of its position.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CN303(BLK)
CAP FG(−)
FG (2)
FG (1)
CAP FG(+)
CN301(WHT)
PG(B)
GND
PG(S)
PG (A)
CN302(BLK)
TRACON (−)
TRACON (CNT)
TRACON (+)
ORG
RED
BRN
TO FU-24 BOARD CN003
CN305(RED)
GND
4.43MHzSC
COMP SYNC
RF SW P
BLK
WHT
RED
BRN
TO RV-7P BOARD CN004
TO HN-1 BOARD CN701 ⑤ pin
TO HN-1 BOARD CN701 ① pin
REC M
UNSWD (12V)
CHASSIS EARTH
GND (12V)
YEL
TO HN-1 BOARD CN701 ④ pin
EASY REC
ORG
TO HN-1 BOARD CN701 ③ pin
IC308
IC602
IC601
IC603
CN002(WHT)
TENSION PICK-UP
GRY
WHT
YEL
T PU(−)
T FB
T PU(+)
TO RV-7 BOARD CN008
EASY STOP
BLU
TO HN-1 BOARD CN701 ⑥ pin
CNT RST
BRN
TO FU-24 BOARD CN004
MODE LOCK
RED
TO HN-1 BOARD CN701 ② pin
CNT RST
GRY
TO HN-1 BOARD CN701 ⑧ pin
TO SC-3 BOARD CN640, CN641
TO SC-2 BOARD
1-613-318-
11

no mark : REC mode
( ) : PB mode
〈 〉 : CUE mode
[ ] : REV mode
【 】 : High speed FF mode
《 》 : High speed REW mode
⟪ ⟫ : FF mode
《 》 : REW mode
【 】 : THREADING mode
【 】 : UNTHREADING mode
Marked * is not able to measure the voltage of its position.

Q , IC	D	ADJ, TP
IC308 612, 654	304,661	TP307
610	608,663	TP309
IC311 615,614	609,626	TP319
613		TP317
320	611,610	TP308
321	613,612	
IC306		TP318
329 611, 613	602	RV316
656		RV315
IC309 635		RV309
310	402, 310	RV301
311 IC314 670	604,607	RV314
677	603,606	TP304
IC313 IC301 IC608	662,672	TP311
342 636	665,673	RV304
638	674,685	RV305
637, 671	601,671	
	664	TP312
404 633	350 628	
405,324 314, 333	687,686	
325 341, 659	641	RV310
406 625	642	TP303
IC305 631,632 626	401	
318 653 627		
664		
307		TP313
634	622,631	TP305
	624	
	301,636	TP315
	315	
309 IC604	314,313	TP306
315 IC611	316	RV302
663	309	TP316
676,658		TP314
IC304 401 672,667	669	
IC307, 402		TP301
024,020,023 IC602		
025 IC004 674	317	
026	667,637	
403	318	TP302
027 021		TP002
022 IC605	001	TP001
	002	
	632	
016 012 IC612	013 012	
015		
058		
018 IC601		
017, IC001,056		
019 013		
014	009	
055 660		
018 060 057	678	
317 059,053	008	
344,303 647		RV318
003,029 054		
011,061	015	RV303
343,304 010 641		
644		
050		
640 643	010	
052 642,661	017	
IC006,051 IC603		
030 619, 646		
IC003, 657		RV001
002		
IC302 001 681		RV003
680	303	
028, 004 675		
006 IC613	690	
	614	TP320
668		
IC609 666		
669,645	689	
006 IC002 682		
IC606 679		
302 623	679	
008,007, IC005		
665		RV002
009 IC607 678,673	014, 670	
IC303 639	003	
	700	
Q , IC	D	ADJ, TP

Note:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▨ : **soldering side**
- ░ : component side
- ▒ : B+ pattern

When indicating parts by reference number, please include the board name.

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

GND (12V) YEL → TO HN-1 BOARD CN701 ④ pin

EASY REC ORG → TO HN-1 BOARD CN701 ③ pin

Q , IC	D	ADJ, TP
IC308 612, 654	304,661	TP307
610	608,663	TP309
IC311 615,614	609,626	TP319
613		TP317
320	611,610	TP308
321	613,612	
IC306		TP318
329 611, 613	602	RV316
656		RV315
635		RV309
IC309	402, 310	RV301
IC314 310 670	604,607	RV314
311 677	603,606	TP304
IC313 IC301 IC608	662,672	TP311
342 636	665,673	RV304
638	674,685	RV305
637, 671	601,671	
	664	TP312
404 633	350 628	
405,324 314, 333	687,686	
325 341, 659	641	RV310
406 625	642	TP303
IC305 631,632 626	401	
318 653 627		
664		
307		TP313
634	622,631	TP305
	624	
	301,636	TP315
IC604	315	
309 IC611	314,313	TP306
315 663	316	RV302
676,658	309	TP316
IC304 401 672,667		TP314
IC307, 402	669	
		TP301
024,020,023 IC602		
025 IC004 674	317	
026	667,637	
403	318	TP302
021		TP002
027 022 IC605	001	TP001
	002	
	632	
	013	
016 012 IC612	012	
015		
058		
018 IC601		
017, IC001,056		
019 013		
014	009	
055 660		
018 060 057	678	
317 059,053	008	
344,303 647		RV318
003,029 054		
011,061	015	RV303
343,304 010 641		
050 644		
640 643	010	
052 642,661	017	
IC006,051 IC603		
030 619, 646		
IC003, 657		RV001
002		
IC302 001 681		RV003
680	303	
028, 004 675		
006 IC613	690	
	614	TP320
668		
IC609 666		
669,645	689	
006 IC002 IC606 682		
679		
302 623	679	
008,007,IC005		RV002
665		
009 IC607 678,673	014, 670	
IC303 639	003	
	700	
Q , IC	D	ADJ, TP

4.9
(4.9)

→ TO SC-3 BOARD CN640, CN641

TO HN-1 BOARD CN701 ② pin

N-1 BOARD
'01 ⑧ pin

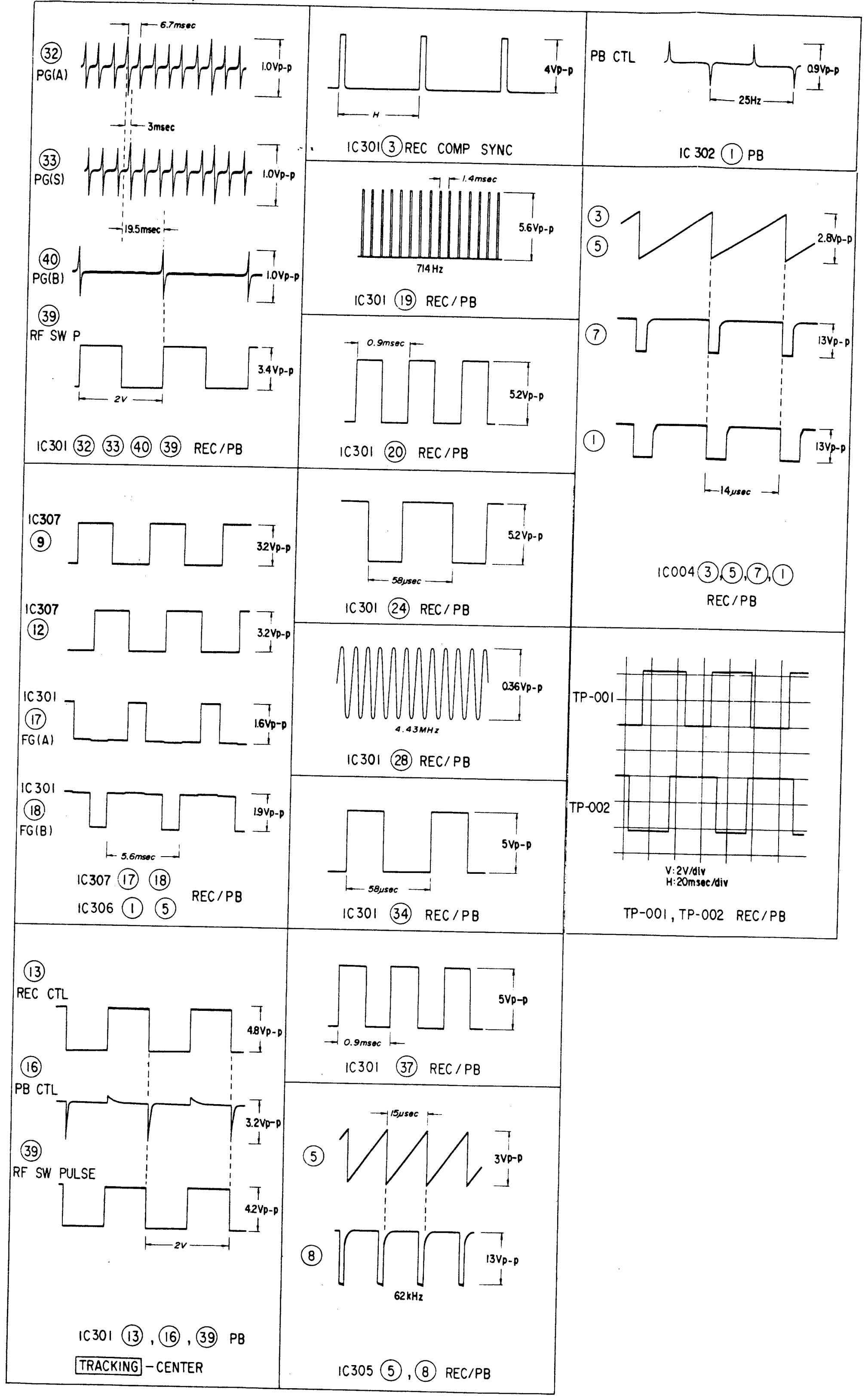
→ TO SC-2 BOARD

Note:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▨ : soldering side
- ░ : component side
- ⋯ : B+ pattern

When indicating parts by reference number, please include the board name.

SS-29 BOARD (SERVO)



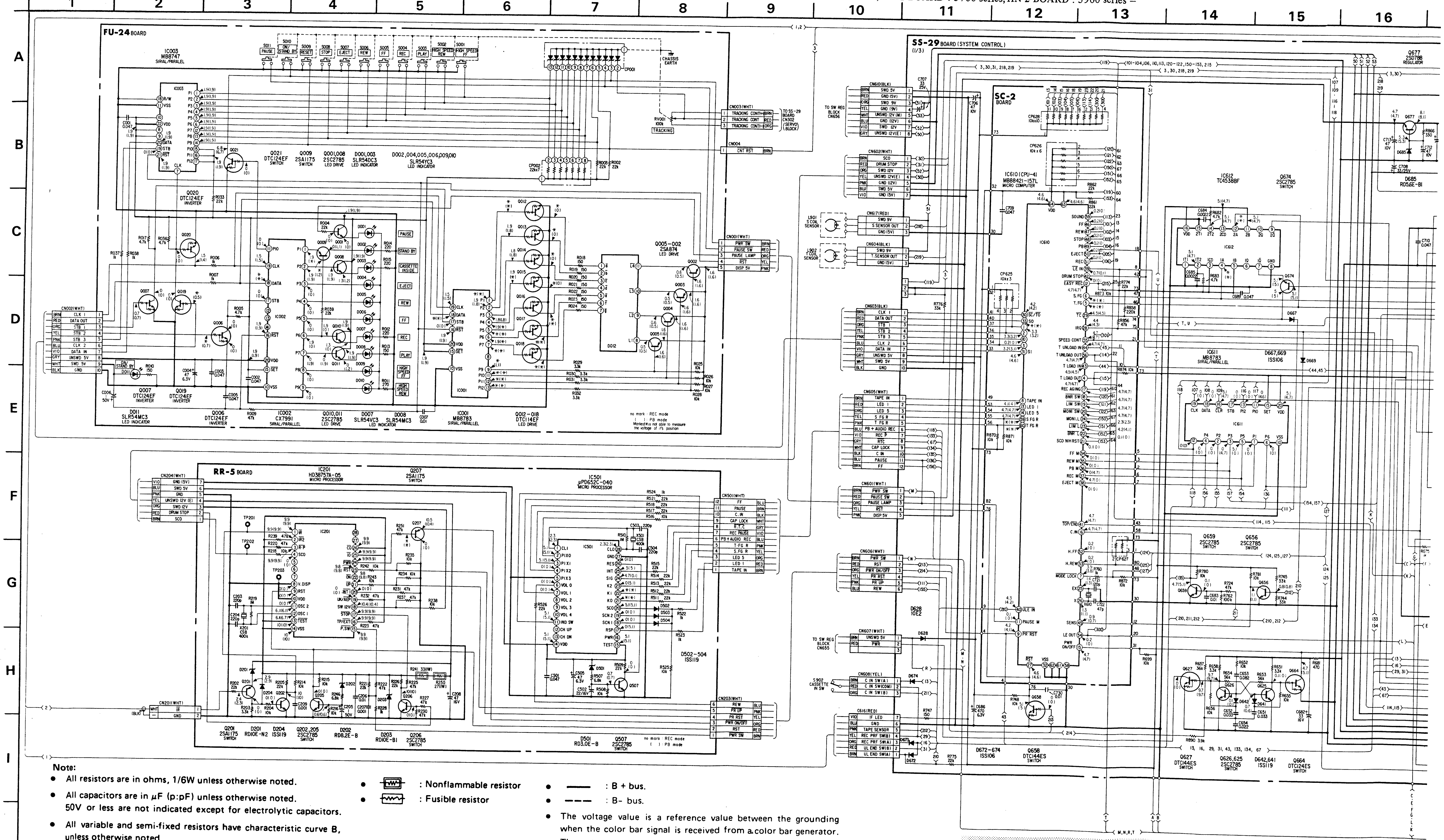
㉜ PG(A)
6.7msec
1.0Vp-p
3msec
㉝ PG(S)
1.0Vp-p
19.5msec
㊵ PG(B)
1.0Vp-p
㊴ RF SW P
3.4Vp-p
2V
IC301 ㉜ ㉝ ㊵ ㊴ REC/PB
4Vp-p
H
IC301 ③ REC COMP SYNC
1.4msec
5.6Vp-p
714 Hz
IC301 ⑲ REC/PB
0.9msec
5.2Vp-p
IC301 ⑳ REC/PB
PB CTL
0.9Vp-p
25Hz
IC 302 ① PB
③
⑤
2.8Vp-p
⑦
13Vp-p
①
13Vp-p
14μsec
IC004 ③,⑤,⑦,①
REC/PB
IC307 ⑨
3.2Vp-p
IC307 ⑫
3.2Vp-p
IC301 ⑰ FG(A)
1.6Vp-p
IC301 ⑱ FG(B)
1.9Vp-p
5.6msec
IC307 ⑰ ⑱
IC306 ① ⑤
REC/PB
5.2Vp-p
58μsec
IC301 ㉔ REC/PB
0.36Vp-p
4.43MHz
IC301 ㉘ REC/PB
5Vp-p
58μsec
IC301 ㉞ REC/PB
TP-001
TP-002
V: 2V/div
H: 20msec/div
TP-001, TP-002 REC/PB
⑬ REC CTL
4.8Vp-p
⑯ PB CTL
3.2Vp-p
㊴ RF SW PULSE
4.2Vp-p
2V
IC301 ⑬, ⑯, ㊴ PB
TRACKING - CENTER
5Vp-p
0.9msec
IC301 ㊲ REC/PB
15μsec
⑤
3Vp-p
⑧
13Vp-p
62kHz
IC305 ⑤, ⑧ REC/PB

A B C D E F G H I J

SYSTEM CONTROL

4-4. FU-24 (FUNCTION SWITCH & INDICATOR), RR-5 (MICRO PROCESSOR), SS-29 (SYSTEM CONTROL), SC-2 (SYSTEM CONTROL), SC-3 (SYSTEM CONTROL), RL-19 (TRANSLATION), LM-8 (NOISE FILTER), HN-1 (SYSTEM CONTROL), HN-2 (REC F

– Ref. No. FU-24 BOARD : 7000 series, RR-5 BOARD : 8000 series, SS-29 BOARD : 4000 series, SC-2, SC-3 BOARD : 6000 series, RL-19 BOARD : 1500 series, LM-8 BOARD : 8100 series, HN-1 BOARD : 5700 series, HN-2 BOARD : 5900 series –


FU-24 BOARD
IC003 MB8747 SIRIAL/PARALLEL
S011 PAUSE
S010 ON/STAND BY
S009 RESET
S008 STOP
S007 EJECT
S006 REW
S005 FF
S004 REC
S003 PLAY
S002 HIGH SPEED REW
S001 HIGH SPEED FF
CHASSIS EARTH
CN003 (WHT)
TRACKING
RV001 100k
CN004
CNT RST
CN001 (WHT)
PWR SW
PAUSE SW
PAUSE LAMP
RST
DISP 5V
CN002 (WHT)
CLK
DATA OUT
STB 1
STB 2
STB 3
CLK 2
DATA IN
UNSWD 5V
SWD 5V
GND
Q021 DTC124EF SWITCH
Q009 2SA1175 SWITCH
Q001,008 2SC2785 LED DRIVE
D001,003 SLR54DC3 LED INDICATOR
D002,004,005,006,009,010 SLR54YC3 LED INDICATOR
Q020 DTC124EF INVERTER
Q005-002 2SA874 LED DRIVE
D011 SLR54MC3 LED INDICATOR
Q007 DTC124EF INVERTER
Q019 DTC124EF INVERTER
Q006 DTC124EF INVERTER
IC002 CX7991 SIRIAL/PARALLEL
Q010,011 2SC2785 SWITCH
D007 SLR54VC3 LED INDICATOR
D008 SLR54MC3 LED INDICATOR
IC001 MB8783 SIRIAL/PARALLEL
Q012-018 DTC114EF LED DRIVE
D012
PAUSE
STAND BY
CASSETTE INSIDE
EJECT
REW
FF
REC
PLAY
HIGH SPEED FF
HIGH SPEED REW
no mark : REC mode
( ) : PB mode
Marked ※ is not able to measure the voltage of it's position.
RR-5 BOARD
IC201 HD38757A-05 MICRO PROCESSOR
Q207 2SA1175 SWITCH
IC501 μPD652C-040 MICRO PROCESSOR
CN204 (WHT)
GND (5V)
SWD 5V
GND
UNSWD 12V (E)
SWD 12V
DRUM STOP
SCO
CN501 (WHT)
FF
PAUSE
C.IN
CAP LOCK
R.T.C
REC PAUSE
PB+AUDIO REC
T.FG R
S.FG R
LED 5
LED 1
TAPE IN
CN203 (WHT)
REW
PR UP
PR RST
PWR ON/OFF
RST
PWR SW
CN201 (WHT)
IR
GND
TP201
TP202
TP203
X201 CSB 400k
X501 CSB 400k
Q201 2SA1175 SWITCH
D201 RD10E-N2
D204 1SS119
Q202,205 2SC2785 SWITCH
D202 RD8.2E-B
D203 RD10E-B1
Q206 2SC2785 SWITCH
D501 RD3.0E-B
Q507 2SC2785 SWITCH
D502-504 1SS119
SS-29 BOARD (SYSTEM CONTROL) (1/3)
SC-2 BOARD
CN610 (BLK)
SWD 5V
GND (5V)
SWD 9V
GND (9V)
UNSWD 12V (M)
GND (12V)
SWD 12V
UNSWD 12V (E)
TO SW REG BLOCK CN656
CN602 (WHT)
SCO
DRUM STOP
SWD 12V
UNSWD 12V (E)
GND (12V)
SWD 5V
GND (5V)
CN617 (RED)
S.SENSOR OUT
CN604 (BLK)
T.SENSOR OUT
L901 S COIL SENSOR
L902 T COIL SENSOR
CN603 (BLK)
CN605 (WHT)
TAPE IN
LED 1
LED 5
S FG R
T FG R
PB+AUDIO REC
REC P
RTC
CAP LOCK
C IN
PAUSE
FF
CN601 (WHT)
PWR SW
PAUSE SW
PAUSE LAMP
RST
DISP 5V
CN606 (WHT)
PWR SW
RST
PWR ON/OFF
PR RST
PR UP
REW
CN607 (WHT)
UNSWD 5V
PWR
TO SW REG BLOCK CN655
S902 CASSETTE IN SW
CN608 (YEL)
C IN SW (A)
C IN SW (COM)
C IN SW (B)
C616 (RED)
IF LED
TAPE SENSOR
REC PRF SW (B)
REC PRF SW (A)
UL END SW (B)
UL END SW (A)
IC610 (CPU-4) MB88421-157L MICRO COMPUTER
IC612 TC4538BF
Q674 2SC2785 SWITCH
IC611 MB8783 SIRIAL/PARALLEL
D667,669 1SS106
Q677 2SD788 REGULATOR
D685 RD5.6E-B1
Q659 2SC2785 SWITCH
Q656 2SC2785 SWITCH
D628 10E2
D672-674 1SS106
Q658 DTC144ES SWITCH
Q627 DTC144ES SWITCH
Q626,625 2SC2785 SWITCH
D642,641 1SS119
Q664 DTC124ES SWITCH

Note:
- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.

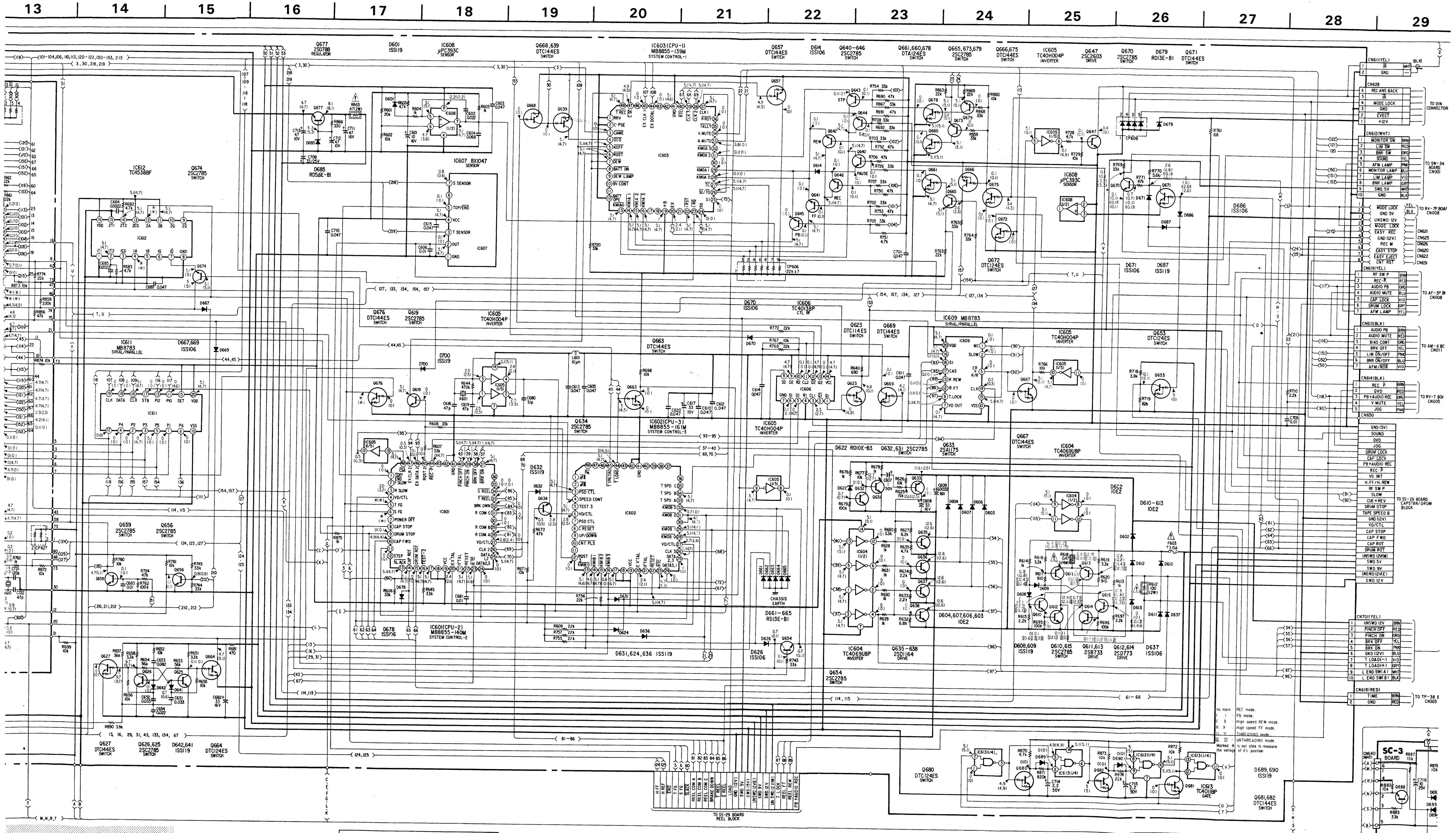
- : Nonflammable resistor
- : Fusible resistor

- —— : B + bus.
- – – – : B– bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10MΩ).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

-8 (NOISE FILTER), HN-1 (SYSTEM CONTROL), HN-2 (REC REMUTE) SCHEMATIC DIAGRAM

)0 series –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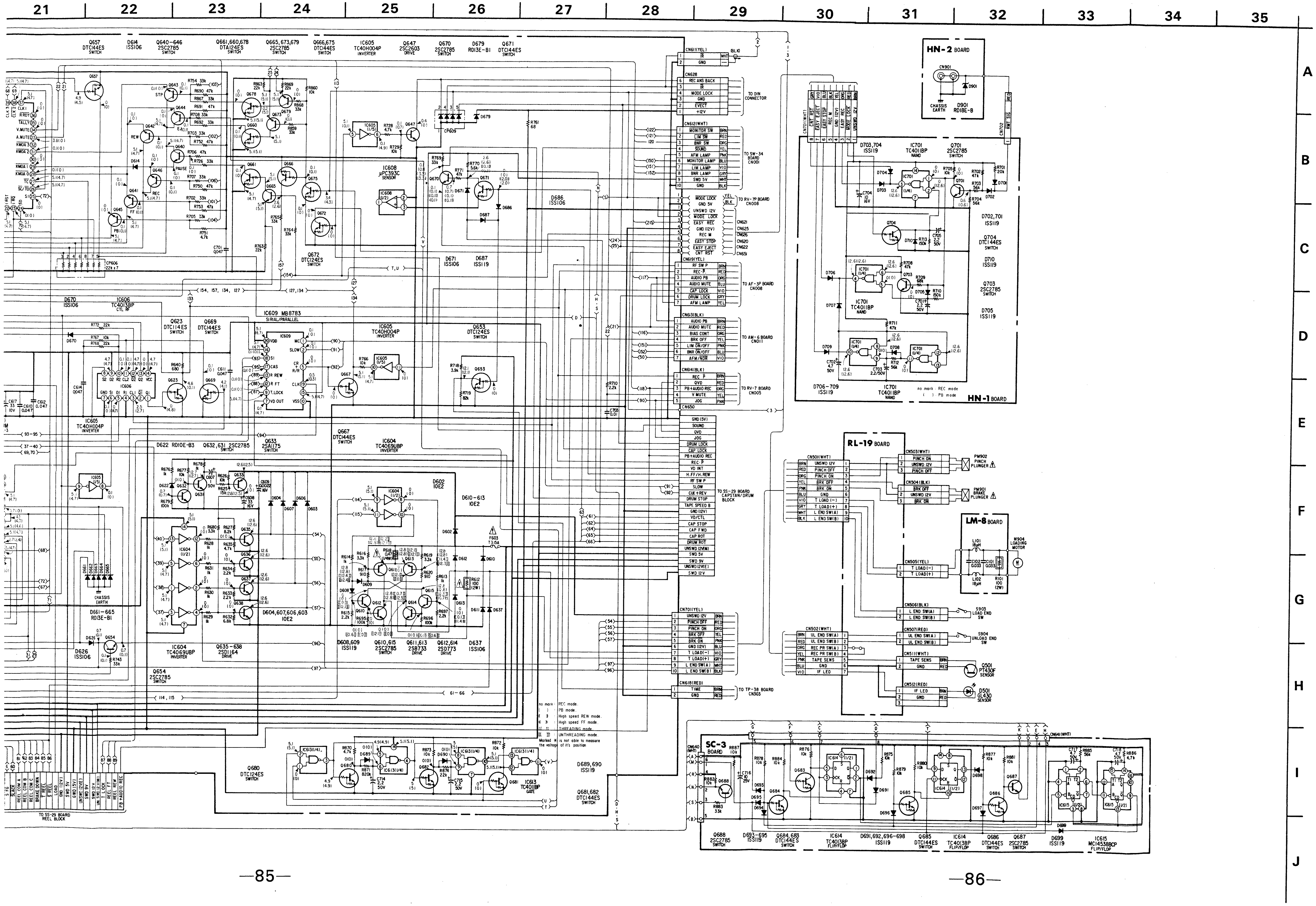
Q677 2SD788 REGULATOR
D601 ISS119
IC608 μPC393C SENSOR
Q668,639 DTC144ES SWITCH
IC603(CPU-1) MB8855-139M SYSTEM CONTROL-1
Q657 DTC144ES SWITCH
D614 ISS106
Q640-646 2SC2785 SWITCH
Q661,660,678 DTA124ES SWITCH
Q665,673,679 2SC2785 SWITCH
Q666,675 DTC144ES SWITCH
IC605 TC40H004P INVERTER
Q647 2SC2603 DRIVE
Q670 2SC2785 SWITCH
D679 RD13E-B1
Q671 DTC144ES SWITCH
IC612 TC4538BF
Q674 2SC2785 SWITCH
D685 RD5.6E-B1
IC607 BX1047 SENSOR
IC603
IC608 μPC393C SENSOR
D686 ISS106
Q672 DTC124ES SWITCH
D671 ISS106
D687 ISS119
Q676 DTC144ES SWITCH
Q619 2SC2785 SWITCH
IC605 TC40H004P INVERTER
D670 ISS106
IC606 TC4013BP CTL FF
Q623 DTC114ES SWITCH
Q669 DTC144ES SWITCH
IC609 MB8783 SERIAL/PARALLEL
IC605 TC40H004P INVERTER
Q653 DTC124ES SWITCH
IC611 MB8783 SERIAL/PARALLEL
D667,669 ISS106
D700 ISS119
Q663 DTC144ES SWITCH
IC611
Q634 2SC2785 SWITCH
IC602(CPU-3) MB8855-161M SYSTEM CONTROL-3
IC605 TC40H004P INVERTER
Q633 2SA1175 SWITCH
Q667 DTC144ES SWITCH
IC604 TC4069UBP INVERTER
D622 RD10E-B3
Q632,631 2SC2785 SWITCH
D632 ISS119
IC601
IC602
D6C2 10E2
D610-613 10E2
Q659 2SC2785 SWITCH
Q656 2SC2785 SWITCH
D604,607,606,603 10E2
D661-665 RD13E-B1
CHASSIS EARTH
D678 ISS106
IC601(CPU-2) MB8855-140M SYSTEM CONTROL-2
D631,624,636 ISS119
D626 ISS106
IC604 TC4069UBP INVERTER
Q635-638 2SD1164 DRIVE
Q654 2SC2785 SWITCH
D608,609 ISS119
Q610,615 2SC2785 SWITCH
Q611,613 2SB733 DRIVE
Q612,614 2SD773 DRIVE
D637 ISS106
Q627 DTC144ES SWITCH
Q626,625 2SC2785 SWITCH
D642,641 ISS119
Q664 DTC124ES SWITCH
Q680 DTC124ES SWITCH
IC613 TC4011BP GATE
D689,690 ISS119
Q681,682 DTC144ES SWITCH
SC-3 BOARD
Q688 2SC2785 SWITCH
D693-6 ISS119
TO SS-29 BOARD REEL BLOCK
TO SS-29 BOARD CAPSTAN/DRUM BLOCK
TO DIN CONNECTOR
TO SW-34 BOARD CN001
TO RV-7P BOARD CN008
TO AF-3P BOARD CN008
TO AM-6 BOARD CN001
TO RV-7 BOARD CN005
TO TP-38 BOARD CN303
CN611(YEL)
CN628
CN612(WHT)
CN619(YEL)
CN613(BLK)
CN614(BLK)
CN650
CN701(YEL)
CN618(RED)
CN640 (WHT)
no mark : REC mode.
( ) : PB mode.
(( )) : High speed REW mode.
« » : High speed FF mode.
[[ ]] : THREADING mode.
[[[ ]]] : UNTHREADING mode.
Marked * is not able to measure the voltage of it's position

s identified by shading and mark
for safety. Replace only with
ecified.

When indicating parts by reference number, please include the board name.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A
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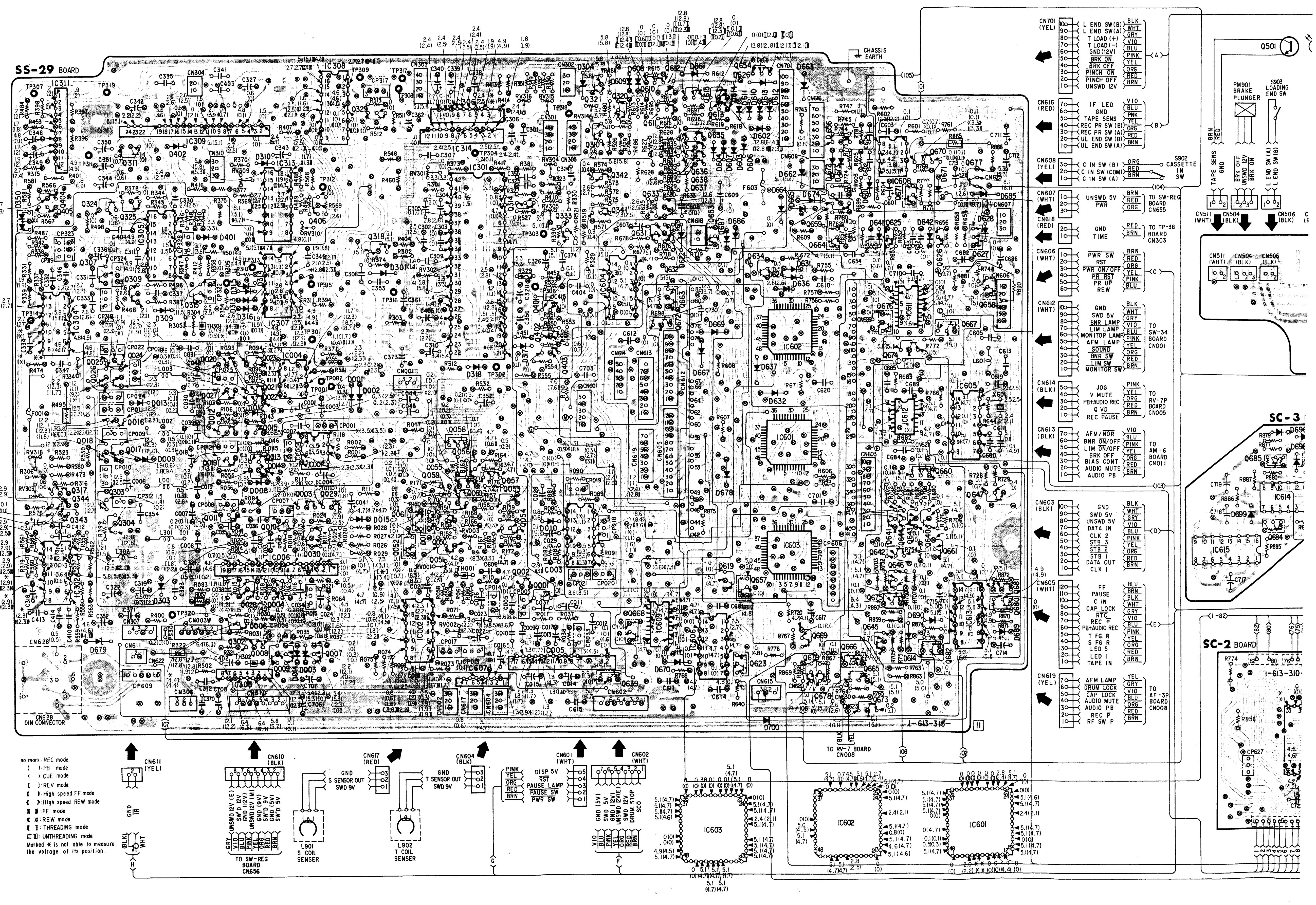
C
D
E
F
G
H
I
J
Q657 DTC144ES SWITCH
D614 1SS106
Q640-646 2SC2785 SWITCH
Q661,660,678 DTA124ES SWITCH
Q665,673,679 2SC2785 SWITCH
Q666,675 DTC144ES SWITCH
IC605 TC40H004P INVERTER
Q647 2SC2603 DRIVE
Q670 2SC2785 SWITCH
D679 RD13E-B1
Q671 DTC144ES SWITCH
IC608 μPC393C SENSOR
D686 1SS106
Q672 DTC124ES SWITCH
D671 1SS106
D687 1SS119
D670 1SS106
IC606 TC4013BP CTL FF
Q623 DTC114ES SWITCH
Q669 DTC144ES SWITCH
IC609 MB8783 SERIAL/PARALLEL
IC605 TC40H004P INVERTER
Q653 DTC124ES SWITCH
IC605 TC40H004P INVERTER
Q667 DTC124ES SWITCH
IC604 TC4069UBP INVERTER
D622 RD10E-B3
Q632,631 2SC2785
Q633 2SA1175 SWITCH
D602 10E2
D610-613 10E2
D661-665 RD13E-B1
CHASSIS EARTH
D626 1SS106
IC604 TC4069UBP INVERTER
Q635-638 2SD1164 DRIVE
D604,607,606,603 10E2
D608,609 1SS119
Q610,615 2SC2785 SWITCH
Q611,613 2SB733 DRIVE
Q612,614 2SD773 DRIVE
D637 1SS106
Q654 2SC2785 SWITCH
Q680 DTC124ES SWITCH
IC613 TC4011BP GATE
D689,690 1SS119
Q681,682 DTC144ES SWITCH
F603 T3.15A
CP606 22k×7
CP609
TO SS-29 BOARD REEL BLOCK
CN611(YEL)
IR
GND
BL10
CN628
REC ANS BACK
IR
MODE LOCK
GND
EVECT
+12V
TO DIN CONNECTOR
CN612(WHT)
MONITOR SW
LIM SW
BNR SW
SOUND
AFM LAMP
MONITOR LAMP
LIM LAMP
BNR LAMP
SWD 5V
GND
TO SW-34 BOARD CN001
MODE LOCK
GND 5V
UNSWD 12V
EASY REC
GND (12V)
REC M
EASY STOP
EASY EJECT
CNT RST
TO RV-7P BOARD CN008
CN621
CN625
CN626
CN620
CN622
CN651
CN619(YEL)
RF SW P
REC P
AUDIO PB
AUDIO MUTE
CAP LOCK
DRUM LOCK
AFM LAMP
TO AF-3P BOARD CN008
CN613(BLK)
AUDIO PB
AUDIO MUTE
BIAS CONT
BRK OFF
LIM ON/OFF
BNR ON/OFF
AFM/NOR
TO AM-6 BOARD CN011
CN614(BLK)
REC P
QVD
PB+AUDIO REC
V.MUTE
JOG
TO RV-7 BOARD CN005
CN650
GND (5V)
SOUND
QVD
JOG
DRUM LOCK
CAP LOCK
PB+AUDIO REC
REC P
VD INT
H.FF/H.REW
RF SW P
SLOW
CUE+REV
DRUM STOP
TAPE SPEED B
GND (12V)
VD/CTL
CAP STOP
CAP FWD
CAP ROT
DRUM ROT
UNSWD (12VM)
SWD 5V
SWD 9V
UNSWD (12VE)
SWD 12V
TO SS-29 BOARD CAPSTAN/DRUM BLOCK
CN701(YEL)
UNSWD 12V
PINCH OFF
PINCH ON
BRK OFF
BRK ON
GND (12V)
T LOAD(−)
T LOAD(+)
L END SW(A)
L END SW(B)
CN618(RED)
TIME
GND
TO TP-38 BOARD CN303
no mark : REC mode
( ) : PB mode
[ ] : High speed REW mode
{ } : High speed FF mode
⟨ ⟩ : THREADING mode
[[ ]] : UNTHREADING mode
Marked ✱ is not able to measure the voltage of it's position
HN-2 BOARD
CN901
CHASSIS EARTH
D901 RD18E-B
CN702
RMT SIG
CN701(WHT)
D703,704 1SS119
IC701 TC4011BP NAND
Q701 2SC2785 SWITCH
D702,701 1SS119
Q704 DTC144ES SWITCH
D710 1SS119
Q703 2SC2785 SWITCH
D705 1SS119
IC701 TC4011BP NAND
D706-709 1SS119
IC701 TC4011BP NAND
no mark : REC mode
( ) : PB mode
HN-1 BOARD
RL-19 BOARD
CN501(WHT)
UNSWD 12V
PINCH OFF
PINCH ON
BRK OFF
BRK ON
GND
T LOAD (−)
T LOAD (+)
L END SW(A)
L END SW(B)
CN503(WHT)
PINCH ON
UNSWD 12V
PINCH OFF
PM902 PINCH PLUNGER
CN504(BLK)
BRK OFF
UNSWD 12V
BRK ON
PM901 BRAKE PLUNGER
LM-8 BOARD
L101 18μH
L102 18μH
C102 0.033
C101 0.033
R101 100 (2W)
M904 LOADING MOTOR
CN505(YEL)
T LOAD(−)
T LOAD(+)
CN506(BLK)
L END SW(A)
L END SW(B)
S903 LOAD END SW
CN502(WHT)
UL END SW(A)
UL END SW(B)
REC PR SW(A)
REC PR SW(B)
TAPE SENS
GND
IF LED
CN507(RED)
UL END SW(A)
UL END SW(B)
S904 UNLOAD END SW
CN511(WHT)
TAPE SENS
GND
Q501 PT430F SENSOR
CN512(RED)
IF LED
GND
D501 GL430 SENSOR
SC-3 BOARD
CN640(WHT)
CN641(WHT)
Q688 2SC2785 SWITCH
D693-695 1SS119
Q684,683 DTC144ES SWITCH
IC614 TC4013BP FLIP/FLOP
D691,692,696-698 1SS119
Q685 DTC144ES SWITCH
IC614 TC4013BP FLIP/FLOP
Q686 DTC144ES SWITCH
Q687 2SC2785 SWITCH
D699 1SS119
IC615 MC14538BCP FLIP/FLOP

SYSTEM CONTROL SYSTEM CONTROL

FU-24 (FUNCTION SWITCH & INDICATOR), RR-5 (MICRO PROCESSOR), SS-29 (SYSTEM CONTROL), SC-2 (SYSTEM CONTROL), SC-3 (SYSTEM CONTROL), RL-19 (TRANSLATION), LM-8 (NOISE FILTER), HN-1 (SYSTEM CONTROL), HN-2 (REC R

– Ref. No. FU-24 BOARD : 7000 series, RR-5 BOARD : 8000 series, SS-29 BOARD : 4000 series, SC-2, SC-3 BOARD : 6000 series, RL-19 BOARD : 1500 series, LM-8 BOARD : 8100 series, HN-1 BOARD : 5700 series, HN-2 BOARD : 5900 series –

	Q , IC	D	ADJ, TP
A	IC308 612, 654 610 IC311 615, 614 613 320	304, 661 608, 663 609, 626 611, 610	TP307 TP309 TP319 TP317
B	321 IC306 329 611, 613 656 635 IC309 310 IC314 311 670 677 IC301 IC313 342 IC608 636 638 637, 671	613, 612 602 402, 310 604, 607 603, 606 662, 672 665, 673 674, 685 601, 671	TP308 TP318 RV316 RV315 RV309 RV301 RV314 TP304 TP311 RV304 RV305
C	404 633 405, 324 314, 333 325 341, 659 406 625 IC305 631, 632 626 318 653 627 664 307 634	664 350 628 687, 686 641 642 401 622, 631 624 301, 636	TP312 RV310 TP303 TP313 TP305
D	IC604 309 IC611 315 663 676, 658 IC304 401 672, 667 IC307, 402 IC602 024, 020, 023 025 IC004 674 026	315 314, 313 316 309 669 317 667, 637	TP315 TP306 RV302 TP316 TP314 TP301
E	403 027 021 022 IC605 016 012 015 IC612 058 018 IC601 017, IC001, 056 019 013 014	318 001 002 632 013 012 009	TP302 TP002 TP001
F	055 660 018 060 057 317 059, 053 344, 303 647 003, 029 054 011, 061 343, 304 010 641 644 050 640 643 052 642, 661 IC006, 051	678 008 015 010 017	RV318 RV303
G	IC603 030 619, 646 IC003, 657 002 IC302 001 681 680 028, 004 675 006 IC613 668 IC609 666 669, 645	303 690 614 689	RV001 RV003 TP320
H	006 IC002 682 IC606 679 302 623 008, 007, IC005 665 009 IC607 678, 673 IC303 639	679 014, 670 003 700	RV002
	Q , IC	D	ADJ, TP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A
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G
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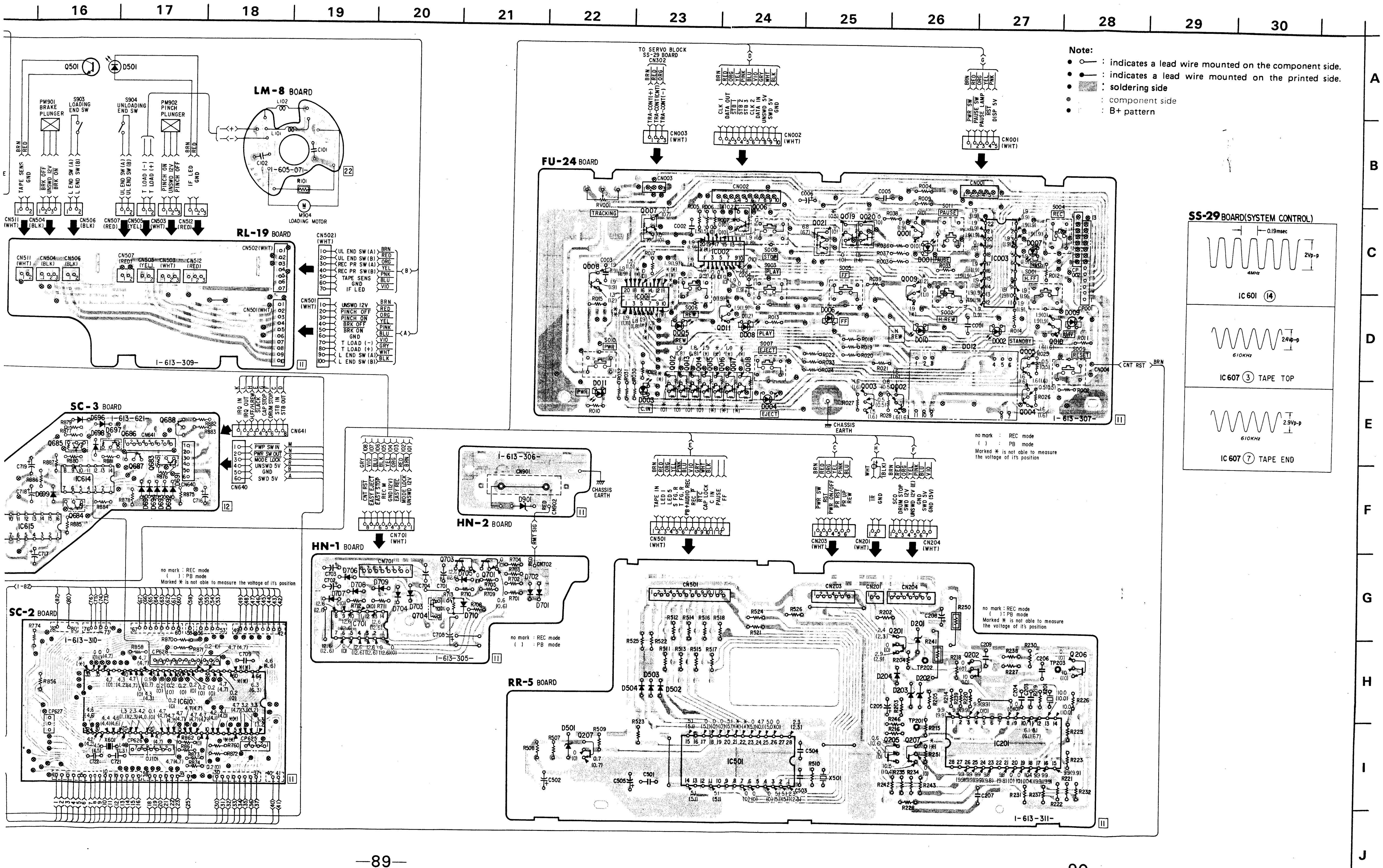
I
J
SS-29 BOARD
CN628
DIN CONNECTOR
CHASSIS EARTH
IC301
IC302
IC303
IC305
IC306
IC307
IC308
IC309
IC311
IC313
IC314
IC601
IC602
IC603
IC604
IC605
IC611
IC612
IC613
IC004
IC005
IC006
CN701 (YEL)
L END SW(B)
L END SW(A)
T LOAD (+)
T LOAD (−)
GND(12V)
BRK ON
BRK OFF
PINCH ON
PINCH OFF
UNSWD 12V
CN616 (RED)
IF LED
GND
TAPE SENS
REC PR SW (B)
REC PR SW (A)
UL END SW (B)
UL END SW (A)
CN608 (YEL)
C IN SW (B)
C IN SW (COM)
C IN SW (A)
S902 CASSETTE IN SW
CN607 (WHT)
UNSWD 5V
PWR
TO SW-REG BOARD CN655
CN618 (RED)
GND
TIME
TO TP-38 BOARD CN303
CN606 (WHT)
PWR SW
RST
PWR ON/OFF
PR RST
PR UP
REW
CN612 (WHT)
GND
SWD 5V
BNR LAMP
LIM LAMP
MONITOR LAMP
AFM LAMP
SOUND
BNR SW
LIM SW
MONITOR SW
TO SW-34 BOARD CN001
CN614 (BLK)
JOG
V MUTE
PB+AUDIO REC
Q VD
REC PAUSE
TO RV-7P BOARD CN005
CN613 (BLK)
AFM/NOR
BNR ON/OFF
LIM ON/OFF
BRK OFF
BIAS CONT
AUDIO MUTE
AUDIO PB
TO AM-6 BOARD CN011
CN603 (BLK)
GND
SWD 5V
UNSWD 5V
DATA IN
CLK 2
STB 3
STB 2
STB 1
DATA OUT
CLK 1
CN605 (WHT)
FF
PAUSE
C IN
CAP LOCK
RTC
REC P
PB+AUDIO REC
T FG R
S FG R
LED 5
LED 1
TAPE IN
CN619 (YEL)
AFM LAMP
DRUM LOCK
CAP LOCK
AUDIO MUTE
AUDIO PB
REC P
RF SW P
TO AF-3P BOARD CN008
TO RV-7 BOARD CN008
PM901 BRAKE PLUNGER
S903 LOADING END SW
TAPE SENS
GND
BRK OFF
UNSWD 12V
BRK ON
L END SW (A)
L END SW (B)
CN511 (WHT)
CN504 (BLK)
CN506 (BLK)
Q501
SC-3
SC-2 BOARD
1-613-315-
1-613-310-
CN611 (YEL)
GND
IR
(BLK)
WHT
CN610 (BLK)
UNSWD 12V (E)
SW'D 12V
GND (12V)
UNSWD 12V (M)
GND (9V)
SW'D 9V
GND (5V)
SW'D 5V
TO SW-REG BOARD CN656
CN617 (RED)
GND
S SENSOR OUT
SWD 9V
L901
S COIL SENSER
CN604 (BLK)
T SENSOR OUT
L902
T COIL SENSER
CN601 (WHT)
DISP 5V
RST
PAUSE LAMP
PAUSE SW
PWR SW
CN602 (WHT)
GND (5V)
SWD 5V
GND (12V)
UNSWD 12V(E)
SWD 12V
DRUM STOP
SCO
GRY
VIO
BLU
PINK
YEL
ORG
RED
BRN
BLK
WHT
IC603
IC602
IC601

no mark : REC mode
( ) : PB mode
〈 〉 : CUE mode
[ ] : REV mode
【 】 : High speed FF mode
《 》 : High speed REW mode
(( )) : FF mode
《《 》》 : REW mode
〚 〛 : THREADING mode
[[ ]] : UNTHREADING mode
Marked * is not able to measure the voltage of its position.

ROL), HN-2 (REC REMUTE) PRINTED WIRING BOARDS

SYSTEM CONTROL SYSTEM CONTROL



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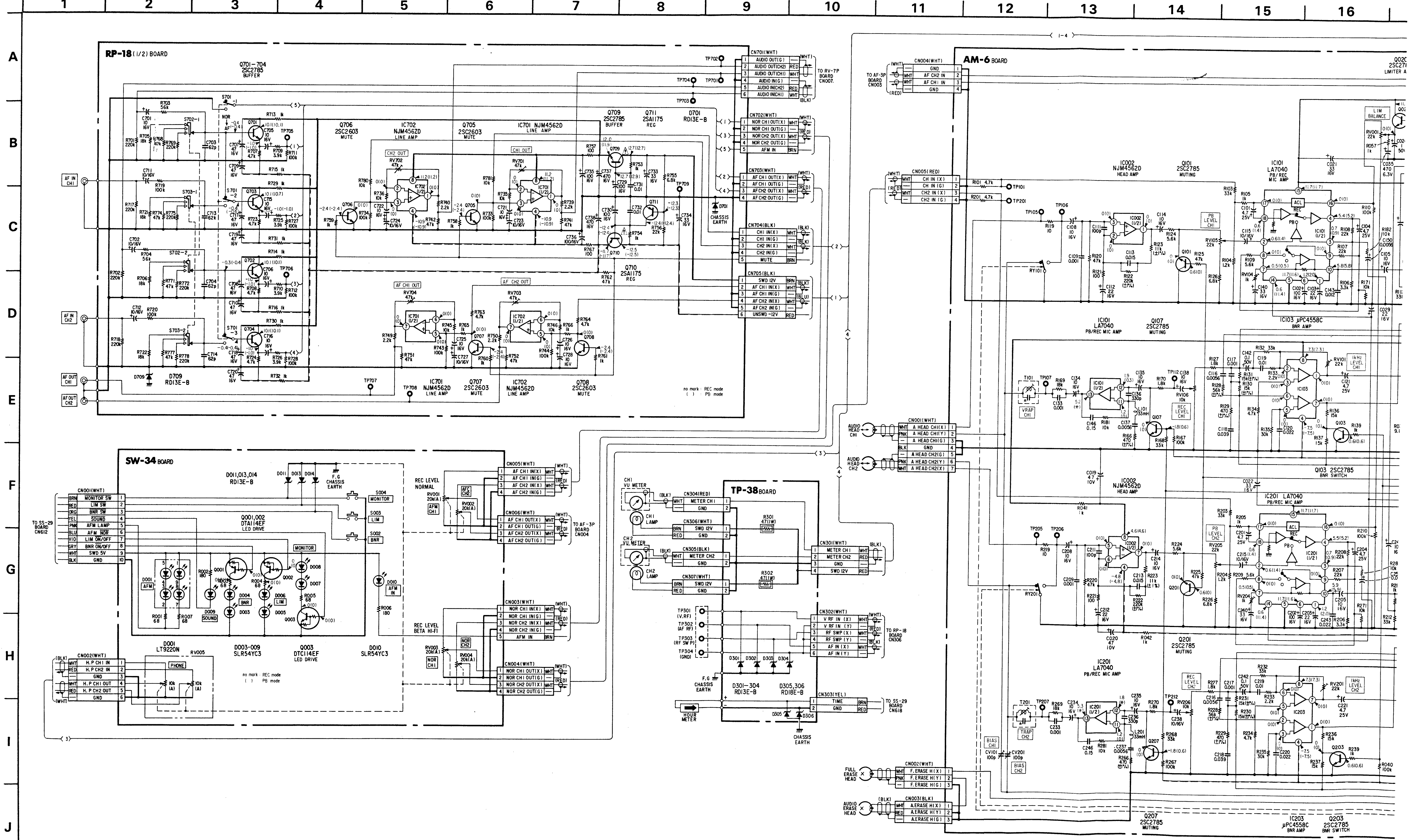
I
J
LM-8 BOARD
RL-19 BOARD
1-613-309-
SC-3 BOARD
1-613-621-
SC-2 BOARD
1-613-310-
HN-1 BOARD
1-613-305-
HN-2 BOARD
1-613-306-
FU-24 BOARD
1-613-307-
RR-5 BOARD
1-613-311-
TO SERVO BLOCK SS-29 BOARD CN302
CHASSIS EARTH
SS-29 BOARD(SYSTEM CONTROL)
0.19msec
2Vp-p
4MHz
IC601 ⑭
24Vp-p
610KHz
IC607 ③ TAPE TOP
2.9Vp-p
610KHz
IC607 ⑦ TAPE END

Note:
- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▨ : soldering side
- : component side
- : B+ pattern

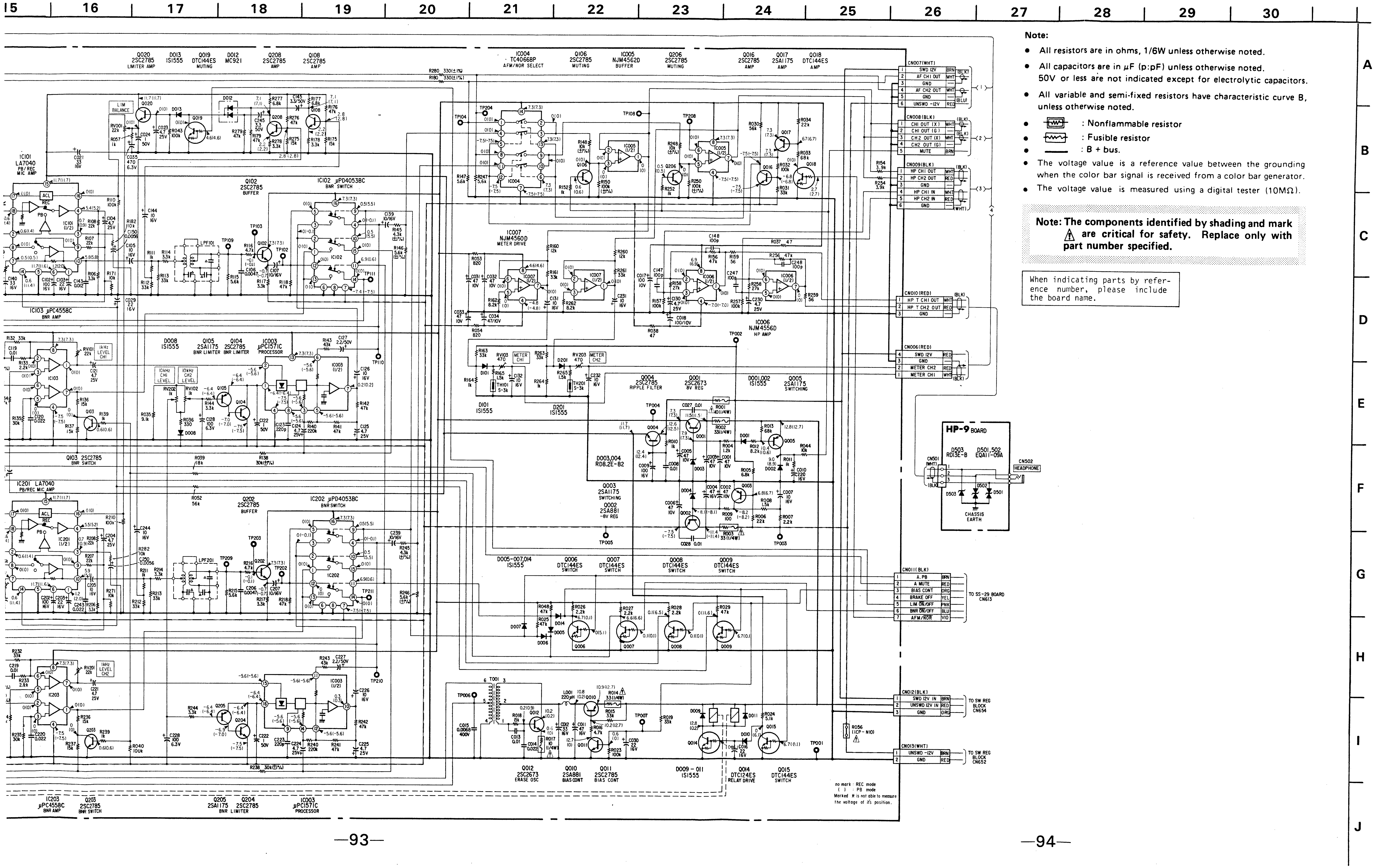
no mark : REC mode
( ) : PB mode
Marked ✻ is not able to measure the voltage of it's position

4-5. RP-18 (1/2) (AUDIO LINE AMP), SW-34 (AFM/NORMAL REC LEVEL, HEADPHONE LEVEL, SWITCH & INDICATOR), TP-38 (VU/HOUR METER, TEST POINT), AM-6 (AUDIO SIGNAL RECORD/PLAYBACK PROCESS), HP-9 (HEADPHONE JACK) SC

– Ref. No. RP-18 BOARD : 2000 series, SW-34 BOARD : 8000 series, TP-38 BOARD : 5300 series, AM-6 BOARD : 5000 series, HP-9 BOARD : 5500 series –


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E F G H I J
RP-18 (1/2) BOARD
Q701–704 2SC2785 BUFFER
Q706 2SC2603 MUTE
IC702 NJM4562D LINE AMP
Q705 2SC2603 MUTE
IC701 NJM4562D LINE AMP
Q709 2SC2785 BUFFER
Q711 2SA1175 REG
D701 RD13E-B
Q710 2SA1175 REG
CH2 OUT
CH1 OUT
AF CH1 OUT
AF CH2 OUT
AF IN CH1
AF IN CH2
AF OUT CH1
AF OUT CH2
D709 RD13E-B
IC701 NJM4562D LINE AMP
Q707 2SC2603 MUTE
IC702 NJM4562D LINE AMP
Q708 2SC2603 MUTE
no mark : REC mode
( ) : PB mode
CN701(WHT)
AUDIO OUT(G)
AUDIO OUT(CH2)
AUDIO OUT(CH1)
AUDIO IN(G)
AUDIO IN(CH2)
AUDIO IN(CH1)
TO RV-7P BOARD CN007
CN702(WHT)
NOR CH1 OUT(X)
NOR CH1 OUT(G)
NOR CH2 OUT(X)
NOR CH2 OUT(G)
AFM IN
CN703(WHT)
AF CH1 OUT(X)
AF CH1 OUT(G)
AF CH2 OUT(X)
AF CH2 OUT(G)
CN704(BLK)
CH1 IN(X)
CH1 IN(G)
CH2 IN(X)
CH2 IN(G)
MUTE
CN705(BLK)
SWD 12V
AF CH1 IN(X)
AF CH1 IN(G)
AF CH2 IN(X)
AF CH2 IN(G)
UNSWD -12V
CHASSIS EARTH
SW-34 BOARD
D011,013,014 RD13E-B
F.G CHASSIS EARTH
CN001(WHT)
MONITOR SW
LIM SW
BNR SW
SOUND
AFM LAMP
AFM NOR
LIM ON/OFF
BNR ON/OFF
SWD 5V
GND
TO SS-29 BOARD CN612
Q001,002 DTA114EF LED DRIVE
S004 MONITOR
S003 LIM
S002 BNR
MONITOR
AFM
SOUND
BNR
LIM
D010 AFM IN
CN002(WHT)
H.P CH1 IN
H.P CH2 IN
GND
H.P CH1 OUT
H.P CH2 OUT
D001 LT9220N
RV005
PHONE
D003-009 SLR54YC3
Q003 DTC114EF LED DRIVE
D010 SLR54YC3
REC LEVEL NORMAL
RV001 20k(A)
RV002 20k(A)
AFC CH2
AFM CH1
REC LEVEL BETA HI-FI
RV003 20k(A)
RV004 20k(A)
NOR CH2
NOR CH1
CN005(WHT)
AF CH1 IN(X)
AF CH1 IN(G)
AF CH2 IN(X)
AF CH2 IN(G)
CN006(WHT)
AF CH1 OUT(X)
AF CH1 OUT(G)
AF CH2 OUT(X)
AF CH2 OUT(G)
TO AF-3P BOARD CN004
CN003(WHT)
NOR CH1 IN(X)
NOR CH1 IN(G)
NOR CH2 IN(X)
NOR CH2 IN(G)
AFM IN
CN004(WHT)
NOR CH1 OUT(X)
NOR CH1 OUT(G)
NOR CH2 OUT(X)
NOR CH2 OUT(G)
TP-38 BOARD
CH1 VU METER
CH1 LAMP
CH2 VU METER
CH2 LAMP
CN304(RED) METER CH1 GND
CN306(WHT) SWD 12V GND
CN305(BLK) METER CH2 GND
CN307(WHT) SWD 12V GND
R301 47(1W)
R302 47(1W)
CN301(WHT) METER CH1 METER CH2 GND SWD 12V
TP301 (V.RF)
TP302 (AF RF)
TP303 (RF SW P)
TP304 (GND)
CN302(WHT) V.RF IN (X) V.RF IN (Y) RF SWP (X) RF SWP (Y) AF IN (X) AF IN (Y)
TO RP-18 BOARD CN306
F.G CHASSIS EARTH
D301–304 RD13E-B
D305,306 RD18E-B
CN303(YEL) TIME GND
TO SS-29 BOARD CN618
HOUR METER
CHASSIS EARTH
AM-6 BOARD
TO AF-3P BOARD CN003
CN004(WHT) GND AF CH2 IN AF CH1 IN GND
CN005(RED) CH1 IN (X) CH1 IN (G) CH2 IN (X) CH2 IN (G)
IC002 NJM4562D HEAD AMP
Q101 2SC2785 MUTING
IC101 LA7040 PB/REC MIC AMP
IC103 μPC4558C BNR AMP
Q107 2SC2785 MUTING
Q103 2SC2785 BNR SWITCH
CN001(WHT) A HEAD CH1(X) A HEAD CH1(Y) A HEAD CH1(G) GND A HEAD CH2(G) A HEAD CH2(Y) A HEAD CH2(X)
AUDIO HEAD CH1
AUDIO HEAD CH2
IC201 LA7040 PB/REC MIC AMP
Q201 2SC2785 MUTING
IC203 μPC4558C BNR AMP
Q203 2SC2785 BNR SWITCH
Q207 2SC2785 MUTING
CN002(WHT) F.ERASE H(X) F.ERASE H(Y) F.ERASE H(G)
FULL ERASE HEAD
CN003(BLK) A.ERASE H(X) A.ERASE H(Y) A.ERASE H(G)
AUDIO ERASE HEAD
PB LEVEL CH1
REC LEVEL CH1
PB LEVEL CH2
REC LEVEL CH2
1kHz LEVEL CH1
1kHz LEVEL CH2
TRAP CH1
TRAP CH2
BIAS CH1
BIAS CH2
LIM BALANCE
LIMITER AMP

9 (HEADPHONE JACK) SCHEMAITC DIAGRAM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A
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H
I
J
Q020 2SC2785 LIMITER AMP
D013 1S1555
Q019 DTC144ES MUTING
D012 MC921
Q208 2SC2785 AMP
Q108 2SC2785 AMP
IC004 TC4066BP AFM/NOR SELECT
Q106 2SC2785 MUTING
IC005 NJM4562D BUFFER
Q206 2SC2785 MUTING
Q016 2SC2785 AMP
Q017 2SA1175 AMP
Q018 DTC144ES AMP
IC101 LA7040 PB/REC MIC AMP
Q102 2SC2785 BUFFER
IC102 μPD4053BC BNR SWITCH
IC103 μPC4558C BNR AMP
IC007 NJM4560D METER DRIVE
IC006 NJM4556D HP AMP
D008 1S1555
Q105 2SA1175 BNR LIMITER
Q104 2SC2785 BNR LIMITER
IC003 μPC1571C PROCESSOR
Q103 2SC2785 BNR SWITCH
D101 1S1555
D201 1S1555
Q004 2SC2785 RIPPLE FILTER
Q001 2SC2673 8V REG
D001,002 1S1555
Q005 2SA1175 SWITCHING
D003,004 RD8.2E-B2
Q003 2SA1175 SWITCHING
Q002 2SA881 -8V REG
IC201 LA7040 PB/REC MIC AMP
Q202 2SC2785 BUFFER
IC202 μPD4053BC BNR SWITCH
D005-007,014 1S1555
Q006 DTC144ES SWITCH
Q007 DTC144ES SWITCH
Q008 DTC144ES SWITCH
Q009 DTC144ES SWITCH
Q012 2SC2673 ERASE OSC
Q010 2SA881 BIAS CONT
Q011 2SC2785 BIAS CONT
D009-011 1S1555
Q014 DTC124ES RELAY DRIVE
Q015 DTC144ES SWITCH
IC203 μPC4558C BNR AMP
Q203 2SC2785 BNR SWITCH
Q205 2SA1175 BNR LIMITER
Q204 2SC2785 BNR LIMITER
IC003 μPC1571C PROCESSOR
CN007 (WHT)
SWD 12V
AF CH1 OUT
GND
AF CH2 OUT
GND
UNSWD -12V
CN008 (BLK)
CH1 OUT (X)
CH1 OUT (G)
CH2 OUT (X)
CH2 OUT (G)
MUTE
CN009 (BLK)
HP CH1 OUT
HP CH2 OUT
GND
HP CH1 IN
HP CH2 IN
GND
CN010 (RED)
HP T CH1 OUT
HP T CH2 OUT
GND
CN006 (RED)
SWD 12V
GND
METER CH2
METER CH1
HP-9 BOARD
D503 RD13E-B
D501,502 EQA11-09A
CN501
CN502 HEADPHONE
CHASSIS EARTH
CN011 (BLK)
A.PB
A MUTE
BIAS CONT
BRAKE OFF
LIM ON/OFF
BNR ON/OFF
AFM/NOR
TO SS-29 BOARD CN613
CN012 (BLK)
SWD 12V IN
UNSWD 12V IN
GND
TO SW REG BLOCK CN654
CN013 (WHT)
UNSWD -12V
GND
TO SW REG BLOCK CN652
R056 (ICP-N10)
LIM BALANCE
1kHz LEVEL CH1
1kHz LEVEL CH2
10kHz CH1 LEVEL
10kHz CH2 LEVEL
METER CH1
METER CH2
LPF101
LPF201
T001
TP001
TP002
TP003
TP004
TP005
TP006
TP007
TP101
TP102
TP103
TP104
TP108
TP109
TP110
TP111
TP201
TP202
TP203
TP204
TP208
TP209
TP210
TP211

no mark : REC mode
( ) : PB mode
Marked ✱ is not able to measure the voltage of it's position.

Note:

- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- : Nonflammable resistor
- : Fusible resistor
- ─── : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10MΩ).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

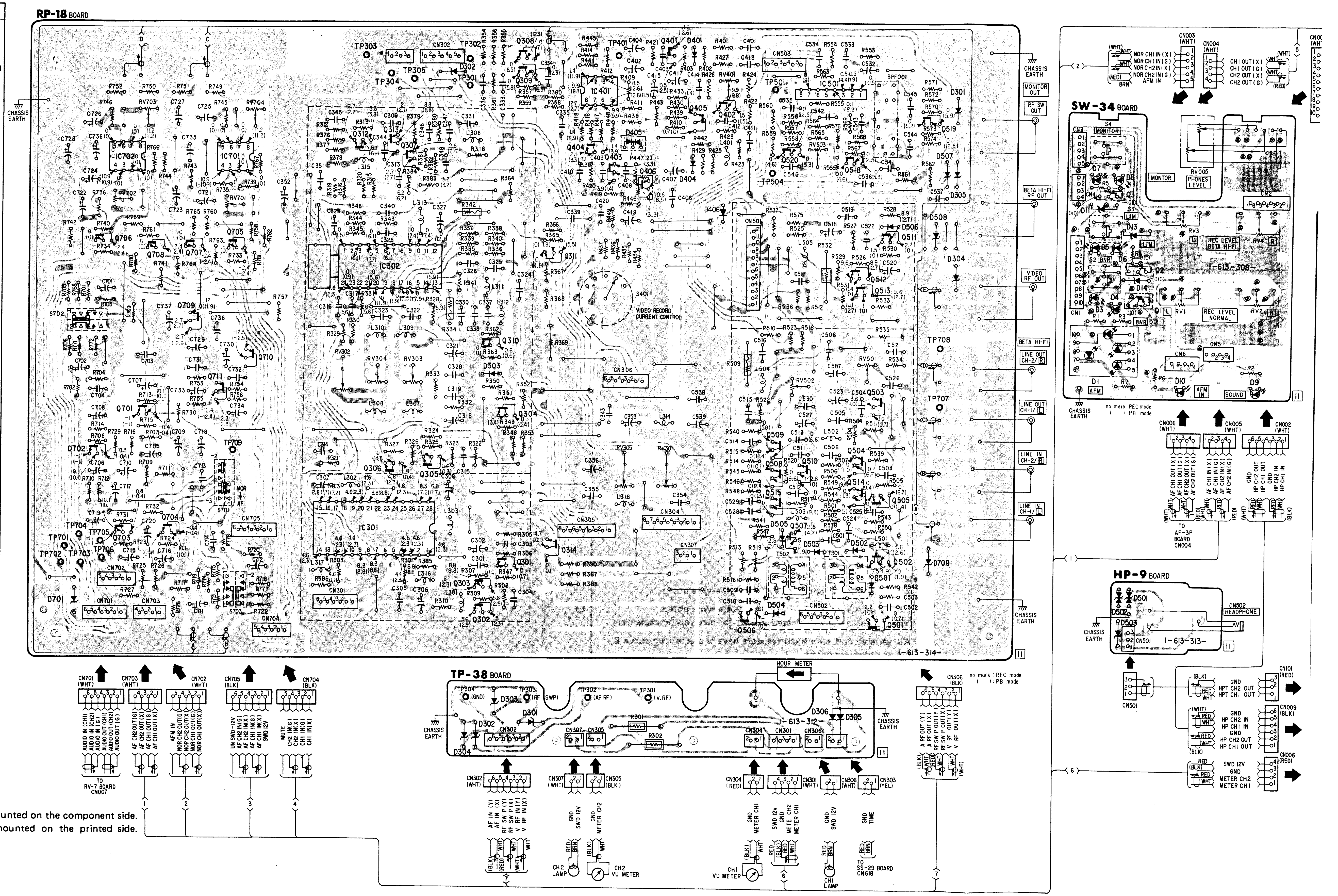
When indicating parts by reference number, please include the board name.

AUDIO (1) AUDIO (1)

RP-18 (1/2) (AUDIO LINE AMP), SW-34 (AFM/NORMAL REC LEVEL, HEADPHONE LEVEL, SWITCH & INDICATOR), TP-38 (VU/HOUR METER, TEST POINT), AM-6 (AUDIO SIGNAL RECORD/PLAYBACK PROCESS), HP-9 (HEADPHONE JACK) PRIN

– Ref. No. RP-18 BOARD : 2000 series, SW-34 BOARD : 8000 series, TP-38 BOARD : 5300 series, AM-6 BOARD : 5000 series, HP-9 BOARD : 5500 series –

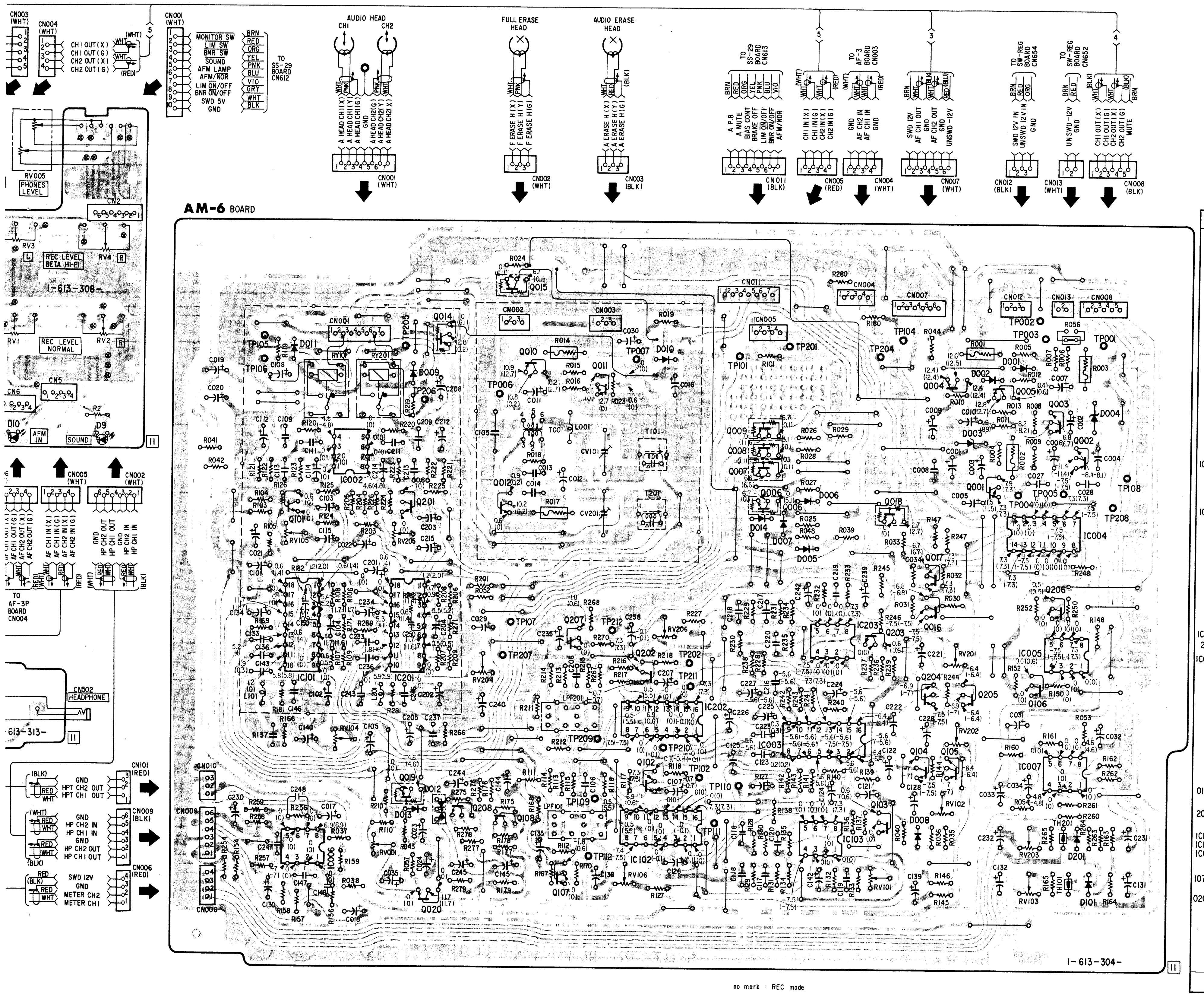
Q , IC	D	ADJ,TP
		TP303
308, 401		TP302
309, 402, 405, 519	401	TP401
	302	TP301 TP501
		TP305
IC401, IC501		TP304
312, 313, 307		RV401
404, 520 403, 518	301	RV703 RV704
406	405	RV503
IC702, IC701		
	404 507	TP504
	305	RV702
		RV701
	406	
511 706, 708, 707, 705 311	506 508	
IC302 512 513		
	304	
709		
310		
710		
		TP708
	303	RV302
711		RV304 RV303
701, 304, 503		RV501 TP707 RV502
		TP709
509 702 508, 510		
306, 305, 504		RV305 RV301
515, 514 505		
IC301		TP704
703, 704, 314 507	505	TP705
502	503	TP701
301	502	TP706
303	709	TP702
		TP703
302	501	
	701	
506	504	
501		
Q , IC	D	ADJ,TP


RP-18 BOARD
CHASSIS EARTH
MONITOR OUT
RF SW OUT
BETA HI-FI RF OUT
VIDEO RF OUT
BETA HI-FI
LINE OUT CH-2/R
LINE OUT CH-1/L
LINE IN CH-2/R
LINE IN CH-1/L
TP708
TP707
S401
VIDEO RECORD CURRENT CONTROL
IC302
IC301
IC501
IC401
IC701
IC702
CN302
CN301
CN304
CN305
CN306
CN307
CN501
CN502
CN701
CN702
CN703
CN704
CN705
1-613-314-
SW-34 BOARD
CN003 (WHT)
CN004 (WHT)
NOR CH1 IN (X)
NOR CH1 IN (G)
NOR CH2 IN (X)
NOR CH2 IN (G)
AFM IN
CH1 OUT (X)
CH1 OUT (G)
CH2 OUT (X)
CH2 OUT (G)
S4 MONITOR
MONTOR
RV005 PHONES LEVEL
S3 LIM
S2 BNR
RV3
RV4
REC LEVEL BETA HI-FI
RV1
RV2
REC LEVEL NORMAL
1-613-308-
AFM
SOUND
no mark : REC mode
( ) : PB mode
CN006 (WHT)
CN005 (WHT)
CN002 (WHT)
TO AF-3P BOARD CN004
HP-9 BOARD
CN502 HEADPHONE
CN501
1-613-313-
GND
HPT CH2 OUT
HPT CH1 OUT
CN101 (RED)
GND
HP CH2 IN
HP CH1 IN
GND
HP CH2 OUT
HP CH1 OUT
CN009 (BLK)
SWD 12V
GND
METER CH2
METER CH1
CN006 (RED)
TP-38 BOARD
TP304 (GND)
TP303 (RF SWP)
TP302 (AF RF)
TP301 (V.RF)
HOUR METER
1-613-312-
CN701 (WHT)
AUDIO IN (CH1)
AUDIO IN (CH2)
AUDIO IN (G)
AUDIO OUT (CH1)
AUDIO OUT (CH2)
AUDIO OUT (G)
TO RV-7 BOARD CN007
CN703 (WHT)
AF CH2 OUT (G)
AF CH2 OUT (X)
AF CH1 OUT (G)
AF CH1 OUT (X)
CN702 (WHT)
AFM IN
NOR CH2 OUT (G)
NOR CH2 OUT (X)
NOR CH1 OUT (G)
NOR CH1 OUT (X)
CN705 (BLK)
UN SWD -12V
AF CH2 IN (G)
AF CH2 IN (X)
AF CH1 IN (G)
AF CH1 IN (X)
SWD 12V
CN704 (BLK)
MUTE
CH2 IN (G)
CH2 IN (X)
CH1 IN (G)
CH1 IN (X)
CN302 (WHT)
AF IN (Y)
AF IN (X)
RF SW P (Y)
RF SW P (X)
V RF IN (Y)
V RF IN (X)
CN307 (WHT)
GND
SWD 12V
CH2 LAMP
CN305 (BLK)
GND
METER CH2
CH2 VU METER
CN304 (RED)
GND
METER CH1
CH1 VU METER
CN301 (WHT)
SWD 12V
GND
METE CH2
METER CH1
CN306 (WHT)
GND
SWD 12V
CH1 LAMP
CN303 (YEL)
GND
TIME
TO SS-29 BOARD CN618
CN306 (BLK)
A RF OUT (Y)
A RF OUT (X)
RF SW P OUT (Y)
RF SW P OUT (X)
V RF OUT (Y)
V RF OUT (X)
no mark : REC mode
( ) : PB mode

Note:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▨ : soldering side
- : B+ pattern
- : component side

EADPHONE JACK) PRINTED WIRING BOARDS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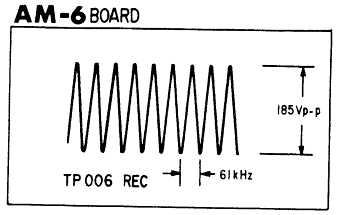
I
CN003 (WHT)
CN004 (WHT)
CH1 OUT(X)
CH1 OUT(G)
CH2 OUT(X)
CH2 OUT(G)
CN001 (WHT)
MONITOR SW
LIM SW
BNR SW
SOUND
AFM LAMP
AFM/NOR
LIM ON/OFF
BNR ON/OFF
SWD 5V
GND
TO SS-29 BOARD CN612
AUDIO HEAD
CH1
CH2
FULL ERASE HEAD
AUDIO ERASE HEAD
TO SS-29 BOARD CN613
TO AF-3 BOARD CN003
TO SW-REG BOARD CN654
TO SW-REG BOARD CN652
CN001 (WHT)
CN002 (WHT)
CN003 (BLK)
CN011 (BLK)
CN005 (RED)
CN004 (WHT)
CN007 (WHT)
CN012 (BLK)
CN013 (WHT)
CN008 (BLK)
RV005
PHONES LEVEL
REC LEVEL BETA HI-FI
1-613-308-
REC LEVEL NORMAL
AFM IN
SOUND
CN005 (WHT)
CN002 (WHT)
TO AF-3P BOARD CN004
CN502
HEADPHONE
1-613-313-
CN101 (RED)
CN009 (BLK)
CN006 (RED)
HPT CH2 OUT
HPT CH1 OUT
HP CH2 IN
HP CH1 IN
HP CH2 OUT
HP CH1 OUT
SWD 12V
METER CH2
METER CH1
AM-6 BOARD
1-613-304-

Q, IC	D	ADJ, TP
015		
		TP002
014		
		TP105, TP104, TP003
	011	TP001
010	010, 001	TP205, TP201
	009, 002	TP106, TP007, TP101
011		TP204
004, 005		TP206, TP006
003	004	
009		
	003	
008 002		CV101
IC002		
007		
		TP108
001		
		TP005
	006	TP004
101, 201, 012, 006		CV201 TP208
018	014	
IC004	007	
		RV105, RV205
	005	
017		
016, 206		
		TP107
IC101 IC201		TP212, RV206
207 IC203, 203		RV201
IC005		TP207
202		RV204, TP202
106		
		TP211
204, 205		
IC202		
		RV202
IC003		RV104, TP209
		TP210
104, 105, IC007		
		TP102
019 102		TP110
	012	TP109, RV102
208	013	
108, 103		TP111
IC102	008, 201	
IC103		RV203
IC006		RV001
		TP112
107		RV106
	101	RV101, RV103
020		
Q, IC	D	ADJ, TP

AM-6 BOARD

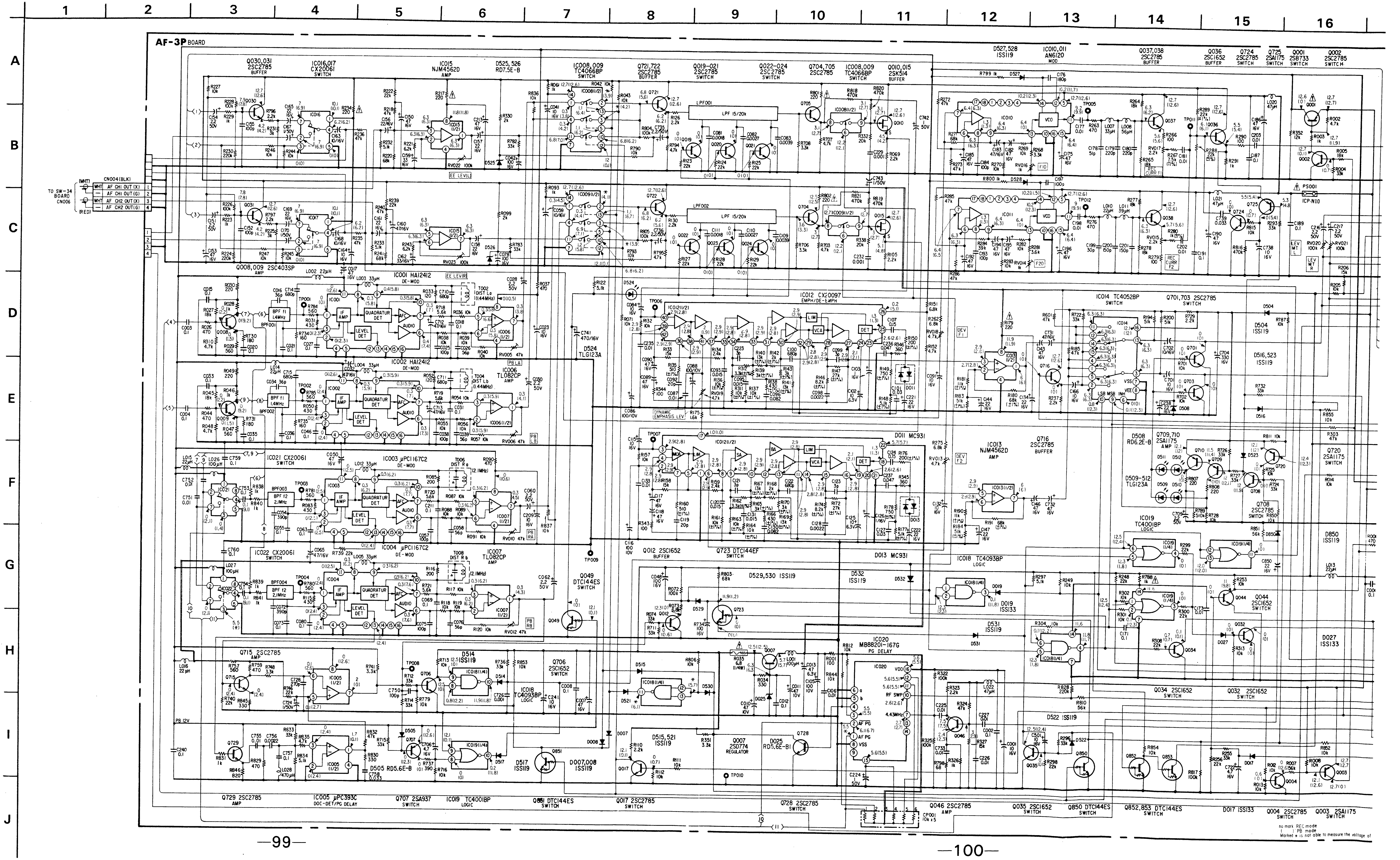


no mark : REC mode
( ) : PB mode
Marked * is not able to measure the voltage of its position

When indicating parts by reference number, please include the board name.

4-6. AF-3P (AFM SIGNAL RECORD/PLAYBACK PROCESS) SCHEMATIC DIAGRAM

– Ref. No. AF-3P BOARD : 3000 series –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A
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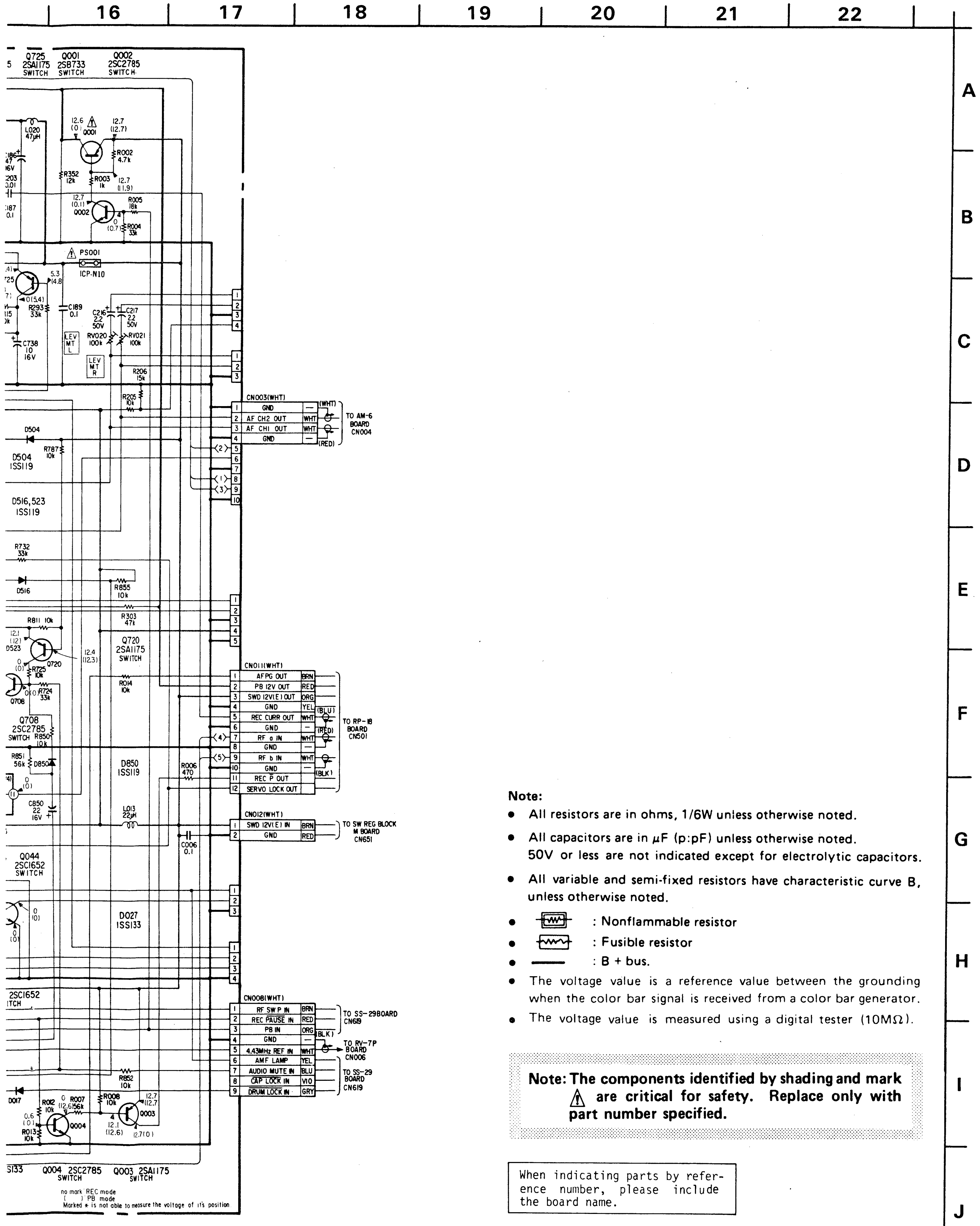
G
H
I
J
AF-3P BOARD
TO SW-34 BOARD CN006
CN004 (BLK)
AF CH1 OUT (X)
AF CH1 OUT (G)
AF CH2 OUT (X)
AF CH2 OUT (G)
Q030,031 2SC2785 BUFFER
IC016,017 CX20061 SWITCH
IC015 NJM4562D AMP
D525,526 RD7.5E-B
IC008,009 TC4066BP SWITCH
Q721,722 2SC2785 BUFFER
Q019–021 2SC2785 SWITCH
Q022–024 2SC2785 SWITCH
Q704,705 2SC2785 SWITCH
IC008,009 TC4066BP SWITCH
Q010,015 2SK514 BUFFER
D527,528 ISS119
IC010,011 AN6120 MOD
Q037,038 2SC2785 BUFFER
Q036 2SC1652 BUFFER
Q724 2SC2785 SWITCH
Q725 2SA1175 SWITCH
Q001 2SB733 SWITCH
Q002 2SC2785 SWITCH
LPF001 LPF 15/20k
LPF002 LPF 15/20k
EE LEVEL
Q008,009 2SC403SP AMP
IC001 HA12412 DE-MOD
IC002 HA12412 DE-MOD
BPF11 1.4MHz
BPF12 2.1MHz
QUADRATUR DET
IF AMP
AFC
AUDIO
LEVEL DET
T002 DIST Lo (1.44MHz)
T004 DIST Lb (1.44MHz)
IC006 TL082CP AMP
D524 TLG123A
IC012 CX20097 EMPH/DE-EMPH
LIM
VCA
DET
DYNAMIC EMPHASIS LEV
D011 MC931
IC014 TC4052BP SWITCH
Q701,703 2SC2785 SWITCH
IC013 NJM4562D AMP
Q716 2SC2785 BUFFER
D508 RD6.2E-B
Q709,710 2SA1175 AMP
D509-512 TLG123A
Q720 2SA1175 SWITCH
Q708 2SC2785 SWITCH
IC021 CX20061 SWITCH
IC003 μPC1167C2 DE-MOD
T006 DIST Ra (2.1MHz)
IC007 TL082CP AMP
IC022 CX20061 SWITCH
IC004 μPC1167C2 DE-MOD
T008 DIST Rb (2.1MHz)
Q049 DTC144ES SWITCH
Q012 2SC1652 BUFFER
Q723 DTC144EF SWITCH
D013 MC931
D529,530 ISS119
D532 ISS119
IC019 TC4001BP LOGIC
IC018 TC4093BP LOGIC
D019 ISS133
D850 ISS119
Q044 2SC1652 SWITCH
Q715 2SC2785 AMP
IC005 (1/2)
D514 ISS119
Q706 2SC1652 SWITCH
IC018 TC4093BP LOGIC
IC020 MB88201-167G PG DELAY
Q007 2SD774 REGULATOR
D025 RD5.6E-B1
D531 ISS119
D522 ISS119
D027 ISS133
Q034 2SC1652 SWITCH
Q032 2SC1652 SWITCH
D505 RD5.6E-B
D517 ISS119
D007,008 ISS119
D515,521 ISS119
PB 12V
Q729 2SC2785 AMP
IC005 μPC393C DOC-DET/PG DELAY
Q707 2SA937 SWITCH
IC019 TC4001BP LOGIC
Q851 DTC144ES SWITCH
Q017 2SC2785 SWITCH
Q728 2SC2785 SWITCH
Q046 2SC2785 AMP
Q035 2SC1652 SWITCH
Q850 DTC144ES SWITCH
Q852,853 DTC144ES SWITCH
D017 ISS133
Q004 2SC2785 SWITCH
Q003 2SA1175 SWITCH
CP001 10k x 5
TP001
TP002
TP003
TP004
TP005
TP006
TP007
TP008
TP009
TP010
TP011
PS001
ICP-N10

no mark REC mode
( ) PB mode
Marked * is not able to measure the voltage of


16
17
18
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20
21
22
A
B
C
D
E
F
G
H
I
J
Q725 2SA1175 SWITCH
Q001 2SB733 SWITCH
Q002 2SC2785 SWITCH
L020 47μH
C186 47 16V
C203 0.01
C187 0.1
12.6 (0)
Q001
12.7 (12.71)
R002 4.7k
R352 12k
R003 1k
12.7 (11.9)
12.7 (0.1)
Q002
R005 18k
0 (0.7)
R004 33k
PS001
ICP-N10
5.3 (4.8)
0 (5.4)
R293 33k
C189 0.1
C216 2.2 50V
C217 2.2 50V
RV020 100k
RV021 100k
LEV MT L
LEV MT R
C738 10 16V
R206 15k
R205 10k
D504
R787 10k
D504 1SS119
D516,523 1SS119
R732 33k
D516
R855 10k
R303 47k
R811 10k
Q720 2SA1175 SWITCH
12.4 (12.3)
Q720
R725 10k
R724 33k
R014 10k
Q708
Q708 2SC2785 SWITCH
R850 10k
R851 56k
D850
D850 1SS119
R006 470
C850 22 16V
L013 22μH
C006 0.1
Q044 2SC1652 SWITCH
D027 1SS133
2SC1652
CN003(WHT)
1 GND —
2 AF CH2 OUT WHT
3 AF CH1 OUT WHT
4 GND —
(WHT)
(RED)
TO AM-6 BOARD CN004
⟨2⟩
⟨1⟩
⟨3⟩
CN011(WHT)
1 AFPG OUT BRN
2 PB 12V OUT RED
3 SWD 12V(E) OUT ORG
4 GND YEL
5 REC CURR OUT WHT
6 GND —
7 RF a IN WHT
8 GND —
9 RF b IN WHT
10 GND —
11 REC P̄ OUT
12 SERVO LOCK OUT
(BLU)
(RED)
(BLK)
TO RP-18 BOARD CN501
⟨4⟩
⟨5⟩
CN012(WHT)
1 SWD 12V(E) IN BRN
2 GND RED
TO SW REG BLOCK M BOARD CN651
CN008(WHT)
1 RF SW P IN BRN
2 REC PAUSE IN RED
3 PB IN ORG
4 GND —
5 4.43MHz REF IN WHT
6 AMF LAMP YEL
7 AUDIO MUTE IN BLU
8 CAP LOCK IN VIO
9 DRUM LOCK IN GRY
TO SS-29BOARD CN619
(BLK)
TO RV-7P BOARD CN006
TO SS-29 BOARD CN619
R852 10k
D017
R012 10k
0 (12.6)
R007 56k
R008 10k
12.7 (12.7)
Q003
0.6 (0)
R013 10k
Q004
12.1 (12.6)
12.7 (0)
Q004 2SC2785 SWITCH
Q003 2SA1175 SWITCH
no mark REC mode
( ) PB mode
Marked * is not able to measure the voltage of it's position.

Note:

- All resistors are in ohms, 1/6W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : Nonflammable resistor
- ▭ : Fusible resistor
- ——— : B + bus.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10MΩ).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

AF-3P (AFM SIGNAL RECORD/PLAYBACK PROCESS) PRINTED WIRING BOARD

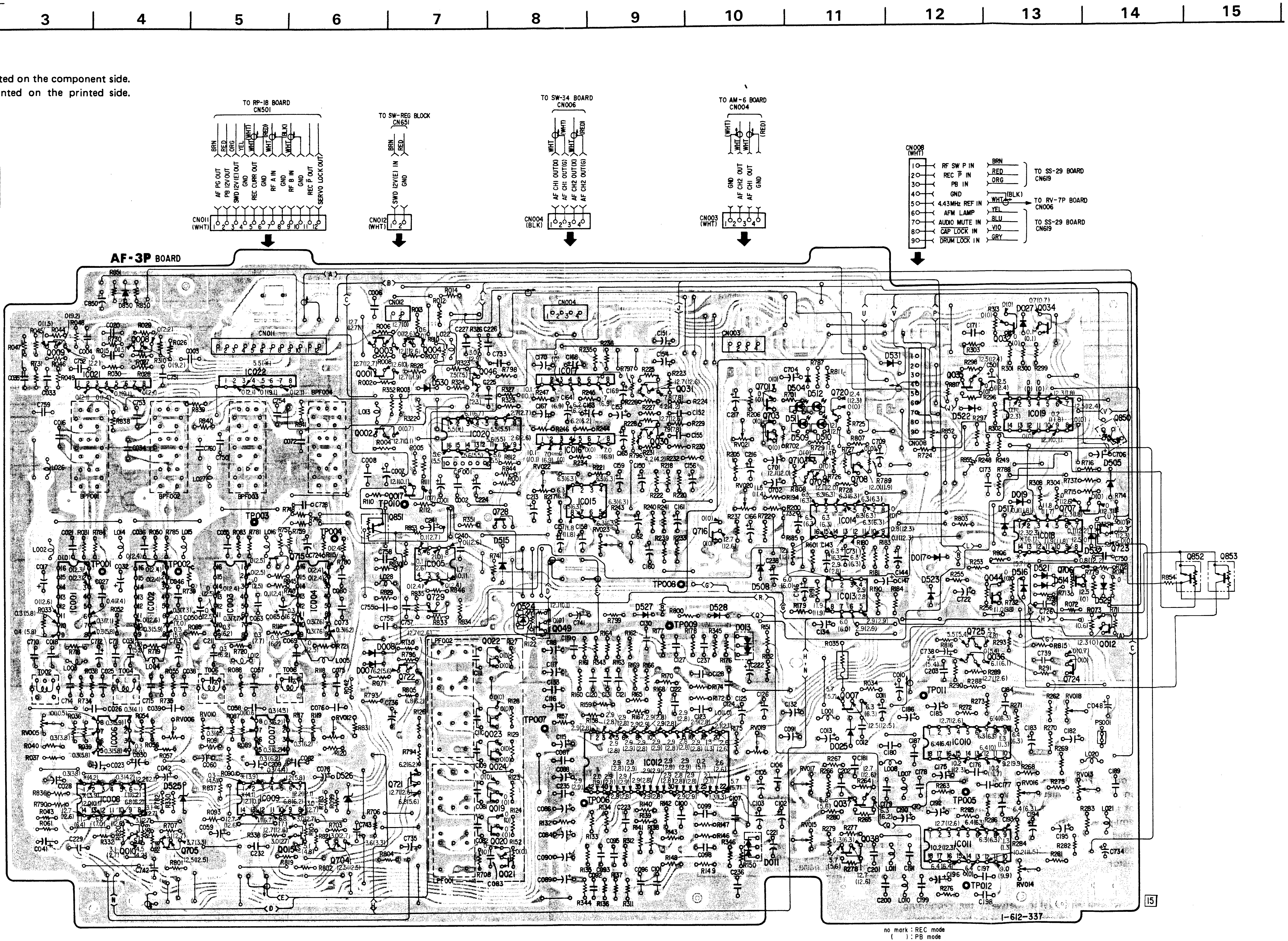
– Ref. No. AF-3P BOARD : 3000 series –

Note:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▨ : soldering side
- ▭ : B+ pattern

When indicating parts by reference number, please include the board name.

	Q, IC	D	RV, TP
C	032, 034	850, 027	
D	008, 003, 009, 004, IC022, 001, 046, IC02, IC017, 031, 035, 701, 703, 720, IC019	531, 504, 530, 511, 512, 522	RV021
E	850, 002, IC020, 030, IC016, 710, 708, 709, 017, 707, IC015, IC014, 723	509, 510, 505, 019, 517, 532	RV020, RV022, TP003, TP010
F	728, 851, IC018, 716, 715, 706, IC005, 852, 853, 044, IC001, IC002, IC003, IC004, IC013, 729	017, 515, 508, 521, 516, 529, 514, 523, 528	TP004, RV023, TP001, TP002, TP008
G	012, 049, 725, 724, 036, 022, 722, 007, 023	524, 527, 013, 008, 007	TP009, TP011, RV018, RV006, RV010, RV012
H	IC006, IC007, IC010, IC012, 024, 721, 019, IC008, IC009, 037	025, 525, 526	RV005, TP007, RV019, RV016, RV017, RV013, TP005, TP006
I	020, 010, 015, 705, 704, 038, IC011, 021	011	RV015, RV014, TP012
	Q, IC	D	RV, TP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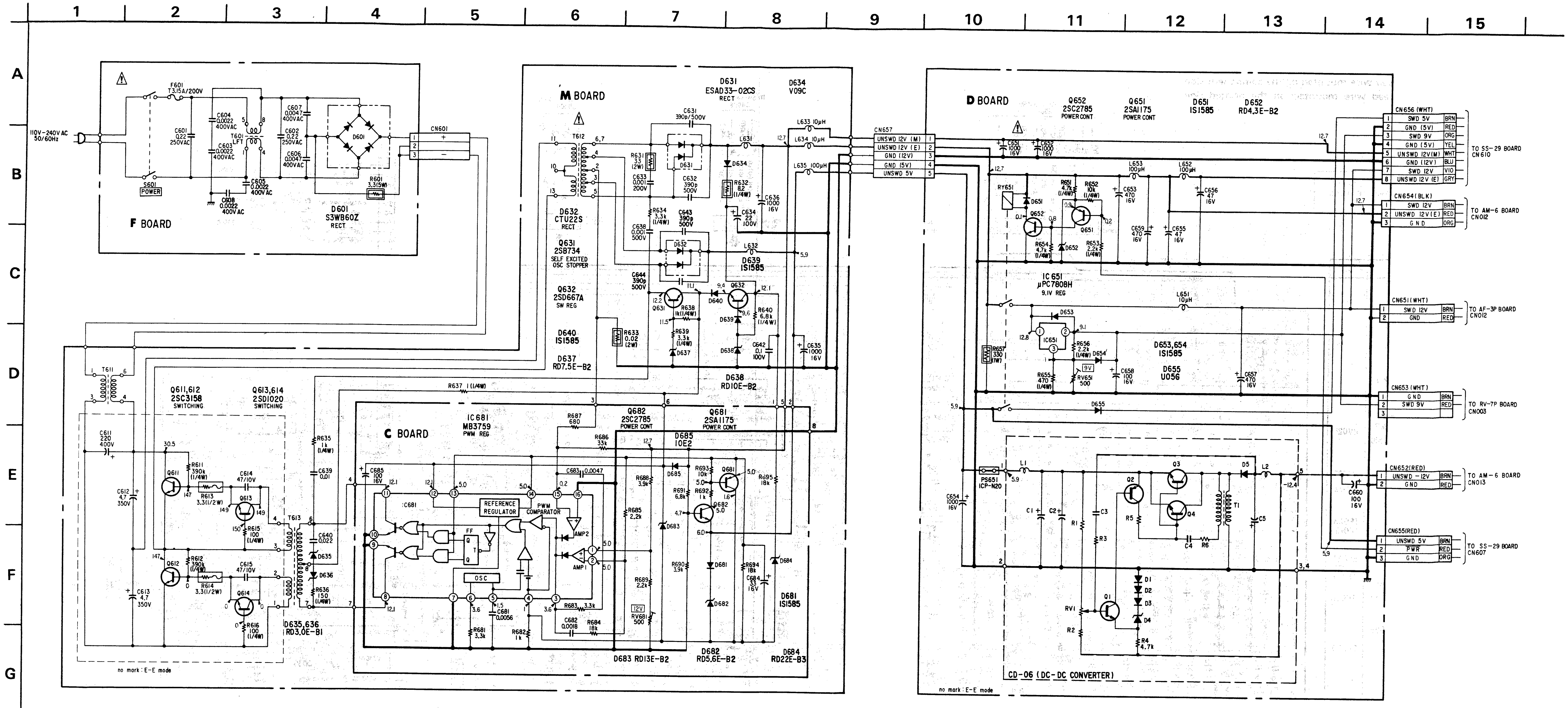
TO RP-18 BOARD CN501
BRN RED ORG YEL WHT (WHT) WHT (RED) WHT (BLK)
AF PG OUT
PB 12V OUT
SWD 12V (E) OUT
GND
REC CURR OUT
GND
RF A IN
GND
RF B IN
GND
REC P̄ OUT
SERVO LOCK OUT
CN011 (WHT)
TO SW-REG BLOCK CN651
BRN RED
SWD 12V(E) IN
GND
CN012 (WHT)
TO SW-34 BOARD CN006
WHT (WHT) WHT (RED)
AF CH1 OUT(X)
AF CH1 OUT(G)
AF CH2 OUT(X)
AF CH2 OUT(G)
CN004 (BLK)
TO AM-6 BOARD CN004
(WHT) WHT WHT (RED)
GND
AF CH2 OUT
AF CH1 OUT
GND
CN003 (WHT)
CN006 (WHT)
1 RF SW P IN BRN
2 REC P̄ IN RED
3 PB IN ORG
TO SS-29 BOARD CN619
4 GND (BLK)
5 4.43MHz REF IN WHT
TO RV-7P BOARD CN006
6 AFM LAMP YEL
7 AUDIO MUTE IN BLU
8 CAP LOCK IN VIO
9 DRUM LOCK IN GRY
TO SS-29 BOARD CN619
AF-3P BOARD
1-612-337
15

no mark : REC mode
( ) : PB mode
Marked ✳ is not able to measure the voltage of it's position

4-7. SR-11UP (POWER SUPPLY) SCHEMATIC DIAGRAM

– Ref. No. 9000 series –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F BOARD
M BOARD
D BOARD
C BOARD
110V-240V AC 50/60Hz
F601 T3.15A/200V
S601 POWER
CN601
D601 S3WB60Z RECT
R601 3.3(5W)
T611
T612
T613
Q611,612 2SC3158 SWITCHING
Q613,614 2SD1020 SWITCHING
D631 ESAD33-02CS RECT
D634 V09C
D632 CTU22S RECT
Q631 2SB734 SELF EXCITED OSC STOPPER
Q632 2SD667A SW REG
D640 1S1585
D637 RD7.5E-B2
D639 1S1585
D638 RD10E-B2
IC681 MB3759 PWM REG
Q682 2SC2785 POWER CONT
Q681 2SA1175 POWER CONT
D685 10E2
REFERENCE REGULATOR
PWM COMPARATOR
AMP1
AMP2
OSC
D683 RD13E-B2
D682 RD5.6E-B2
D684 RD22E-B3
D681 1S1585
D635,636 RD3.0E-B1
no mark : E-E mode
CN657
UNSWD 12V (M)
UNSWD 12V (E)
GND (12V)
GND (5V)
UNSWD 5V
Q652 2SC2785 POWER CONT
Q651 2SA1175 POWER CONT
D651 1S1585
D652 RD4.3E-B2
RY651
IC651 μPC7808H 9.1V REG
D653,654 1S1585
D655 U05G
PS651 ICP-N20
CD-06 (DC-DC CONVERTER)
CN656 (WHT)
SWD 5V
GND (5V)
SWD 9V
GND (5V)
UNSWD 12V(M)
GND (12V)
SWD 12V
UNSWD 12V (E)
TO SS-29 BOARD CN610
CN654 (BLK)
SWD 12V
UNSWD 12V (E)
GND
TO AM-6 BOARD CN012
CN651 (WHT)
SWD 12V
GND
TO AF-3P BOARD CN012
CN653 (WHT)
GND
SWD 9V
TO RV-7P BOARD CN003
CN652 (RED)
UNSWD -12V
GND
TO AM-6 BOARD CN013
CN655 (RED)
UNSWD 5V
PWR
GND
TO SS-29 BOARD CN607
no mark : E-E mode

Note:

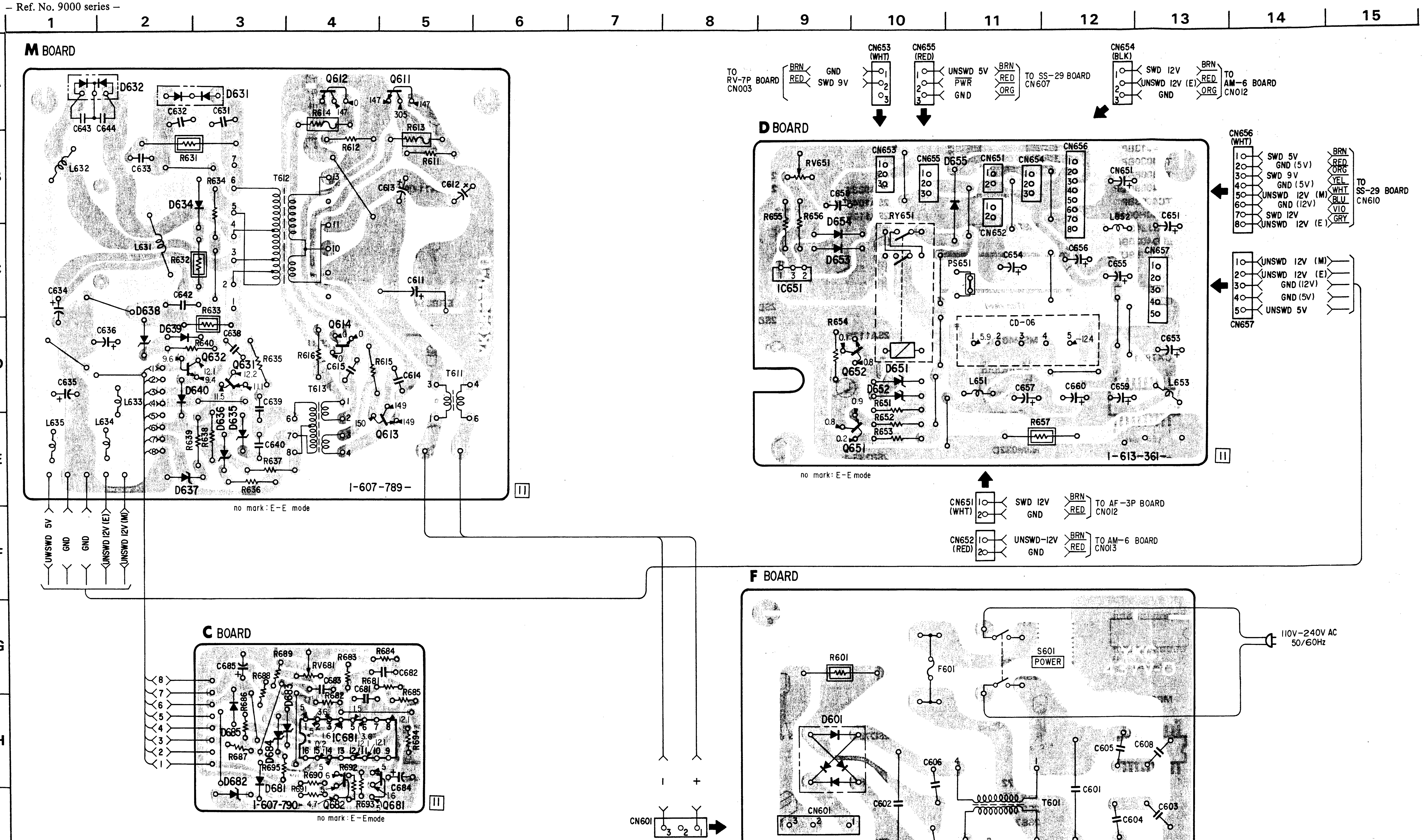
- All resistors are in ohms, 1/8W unless otherwise noted.
- All capacitors are in μF (p:pF) unless otherwise noted. 50V or less are not indicated except for electrolytic capacitors.
- All variable and semi-fixed resistors have characteristic curve B, unless otherwise noted.
- ▭ : Nonflammable resistor
- ▭ : Fusible resistor
- —— : B+ bus.
- - - - : B– bus.
- The voltage value is reference value between the grounding when the color bar signal is received from a color bar generator.
- The voltage value is measured using a digital tester (10MΩ).
- The voltage of Q611, Q612, Q613 and Q614 are taken between the emitter of Q612 and each point.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SR-11UP (POWER SUPPLY) PRINTED WIRING BOARDS

– Ref. No. 9000 series –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A
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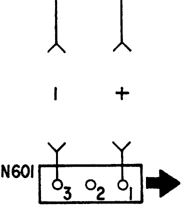
H
I
J
M BOARD
D632
D631
C643 C644
C632 C631
L632
C633
R631
Q612
Q611
R614
R612
R613
R611
T612
C613
C612
D634
R634
L631
R632
C634
C642
D638
R633
C636
D639
R640
C638
Q632
Q631
R635
Q614
R616
C615
R615
C614
T611
C611
C635
D640
C639
L633
L635
L634
R639
R638
D636
D635
C640
R637
T613
Q613
D637
R636
1-607-789-
no mark: E-E mode
UNSWD 5V
GND
GND
UNSWD 12V (E)
UNSWD 12V (M)
TO RV-7P BOARD CN003
BRN
RED
GND
SWD 9V
CN653 (WHT)
CN655 (RED)
UNSWD 5V
PWR
GND
BRN
RED
ORG
TO SS-29 BOARD CN607
CN654 (BLK)
SWD 12V
UNSWD 12V (E)
GND
BRN
RED
ORG
TO AM-6 BOARD CN012
D BOARD
RV651
CN653
CN655
D655
CN651
CN654
CN656
CN651
C658
R655
R656
D654
RY651
D653
CN652
C654
C656
C655
C651
L652
CN657
IC651
PS651
CD-06
R654
C653
Q652
D651
D652
R651
R652
R653
Q651
L651
C657
C660
C659
L653
R657
1-613-361-
no mark: E-E mode
CN656 (WHT)
SWD 5V
GND (5V)
SWD 9V
GND (5V)
UNSWD 12V (M)
GND (12V)
SWD 12V
UNSWD 12V (E)
BRN
RED
ORG
YEL
WHT
BLU
VIO
GRY
TO SS-29 BOARD CN610
UNSWD 12V (M)
UNSWD 12V (E)
GND (12V)
GND (5V)
UNSWD 5V
CN657
CN651 (WHT)
SWD 12V
GND
BRN
RED
TO AF-3P BOARD CN012
CN652 (RED)
UNSWD-12V
GND
BRN
RED
TO AM-6 BOARD CN013
F BOARD
R601
F601
S601 POWER
110V-240V AC 50/60Hz
D601
C606
C605
C608
C602
T601
C601
C603
C604
C607
CN601
1-607-792-
C BOARD
C685
R689
RV681
R683
R684
C682
R688
C683
R681
R685
R686
D683
R682
C681
IC681
R694
D685
R687
D684
R695
R690
R692
C684
D682
D681
R691
Q682
R693
Q681
1-607-790-
no mark: E-Emode
CN601
−
+



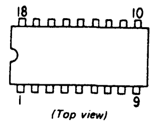
Note:

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▨ : soldering side
- ⬚ : B+ pattern

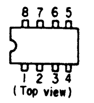
When indicating parts by reference number, please include the board name.

4-8. SEMICONDUCTORS

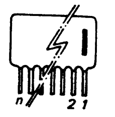
AN6120
CX882
LA7040


18
10
1
9
(Top view)

BA4558
HA17558
NJM2903D
NJM4556D
NJM4558D
NJM4560D
NJM4562D
NJM4562D-D
TL082CP
μPC393C
μPC4082C
μPC4558C

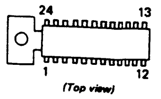

8 7 6 5
1 2 3 4
(Top view)

BX1013
BX1028
BX1029
BX1030
BX1032
BX1033
BX1033A
BX1034
BX1034A
BX1038
BX1039
BX1047
BX3976
BX3978
BX3980
BX3981
BX3983

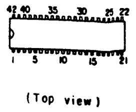


(Marking side view)

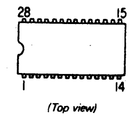
CX134A


24
13
1
12
(Top view)

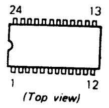
CX194B-5
CX20097


42 40 35 30 25 22
1 5 10 15 21
(Top view)

CX862
CX866A
CX866B
CX869
CX869A
CX869B
HD38757A-05
μPD652C-040


28
15
1
14
(Top view)

CX864
CX868
CX897


24
13
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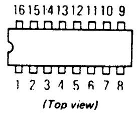
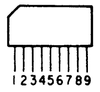
12
(Top view)

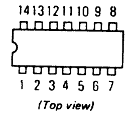
CX870A
HA12412
HD14053BP
HD14538BP
MB3759
MB84051B
MB84053B
MB88201-167G
MC14538BCP
NE570N
NE571N
TC4051BP
TC4052BP
TC4053BP
TL494CN
μPC1167C2
μPC1571C
μPD4051BC
μPD4053BC


16 15 14 13 12 11 10 9
1 2 3 4 5 6 7 8
(Top view)

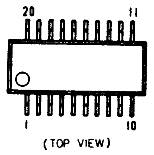
CX894



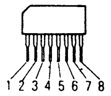
CX7905A
HD14011BP
MB3614
MB84011B
MB84069UB
M5M4011RS
TC4001BP
TC4011BP
TC4013BP
TC4030BP
TC4066BP
TC4069UBP
TC4093BP
TC40H004P
μPC324C
μPD4030BC
μPD4069UBC


14 13 12 11 10 9 8
1 2 3 4 5 6 7
(Top view)

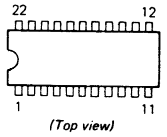
CX7991


20
11
1
10
(TOP VIEW)

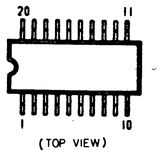
CX20008
CX20061



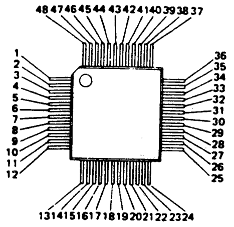
MB8747


22
12
1
11
(Top view)

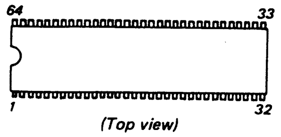
MB8783


20
11
1
10
(TOP VIEW)

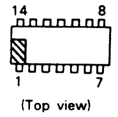
MB8855-139
MB8855-140
MB8855-161


48 47 46 45 44 43 42 41 40 39 38 37
1 2 3 4 5 6 7 8 9 10 11 12
36 35 34 33 32 31 30 29 28 27 26 25
13 14 15 16 17 18 19 20 21 22 23 24

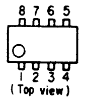
MB88421-157L


64
33
1
32
(Top view)

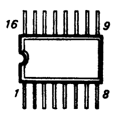
MSM4011BRS


14
8
1
7
(Top view)

NJM082D


8 7 6 5
1 2 3 4
(Top view)

TC4538BF



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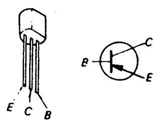

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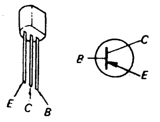
2SA773
2SB739
2SB740



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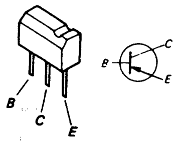
2SA937



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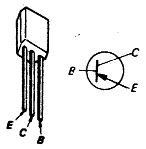
2SA1115



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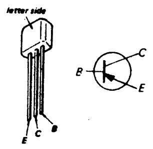
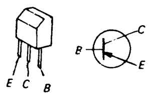

letter side
E C B
B
C
E

2SB733-4
2SB734



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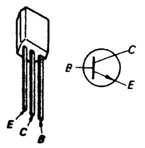
2SC2458
2SC2603
2SD1012



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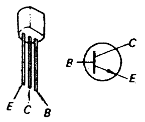

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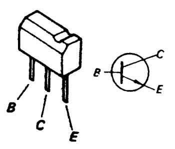
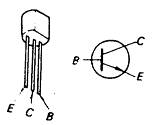
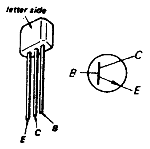
2SC2673



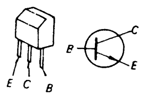
2SC1740S
2SC1815
2SC2001



2SC2785
2SD1020


letter side
E C B
B
C
E

2SD773
2SD774



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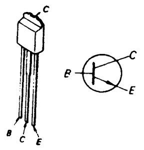
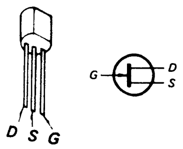
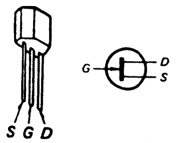


2SK152-3



2SK514



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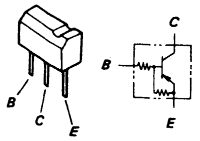

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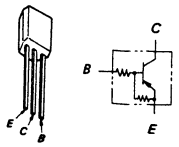

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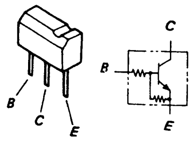
DTC124EF
DTC144EF



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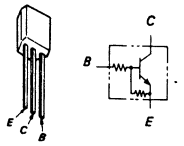
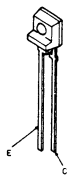
DTC124ES
DTC144ES



PT430F



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10E-2
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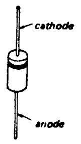
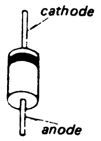
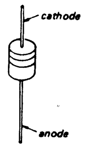
ERB12-02RK
ERB12-04RK


cathode
anode

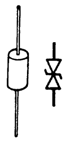
1S1155
1SS106
EQA02-05F
EQA02-06A
EQA02-08B
EQA02-08C
EQA02-08D
EQA02-09D
EQA02-10A
EQA02-10A5
EQA02-10B
EQA02-12A
EQA02-12B
EQA02-13A
EQA02-13AB5
EQA02-16B
EQA02-17A
EQA02-17B
HZ10E-B1
HZ10E-B2
HZ10E-B3
HZ13E-B1
HZ13E-B2
HZ13E-B3
HZ18E-B1
HZ18E-B2
HZ18E-B3
HZ30E-B1
HZ30E-B2
HZ5.6E-B1
HZ5.6E-B2
HZ8.2E-B1
HZ8.2E-B2
HZ8.2E-B3
RD10E-B
RD10E-B1
RD10E-B2
RD10E-B3
RD10E-N2
RD13E-B
RD13E-B1
RD13E-B2
RD13E-B3
RD18E-B
RD3.0E-B
RD5.6E-B
RD5.6E-B1
RD5.6E-B2
RD6.2E-B
RD7.5E-B
RD8.2E-B
RD8.2E-B2
RD9.1E-W


cathode
anode

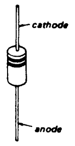
1SS119
1SS133
1SS148


cathode
anode

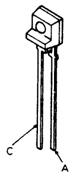
EQA11-09A



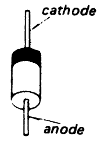
ERB81-004


cathode
anode

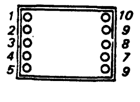
GL-430



GP08B
GP08D
GP08G

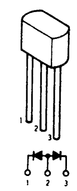

cathode
anode

LT9220N

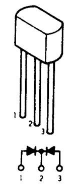

1 2 3 4 5
10 9 8 7 6

(Bottom View)

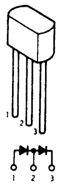
MC911



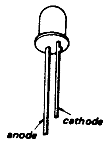
MC921



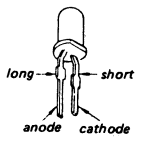
MC931



SLR-54DC3
SLR-54MC3
SLR-54VC3
SLR-54YC3


anode
cathode

TLG123A

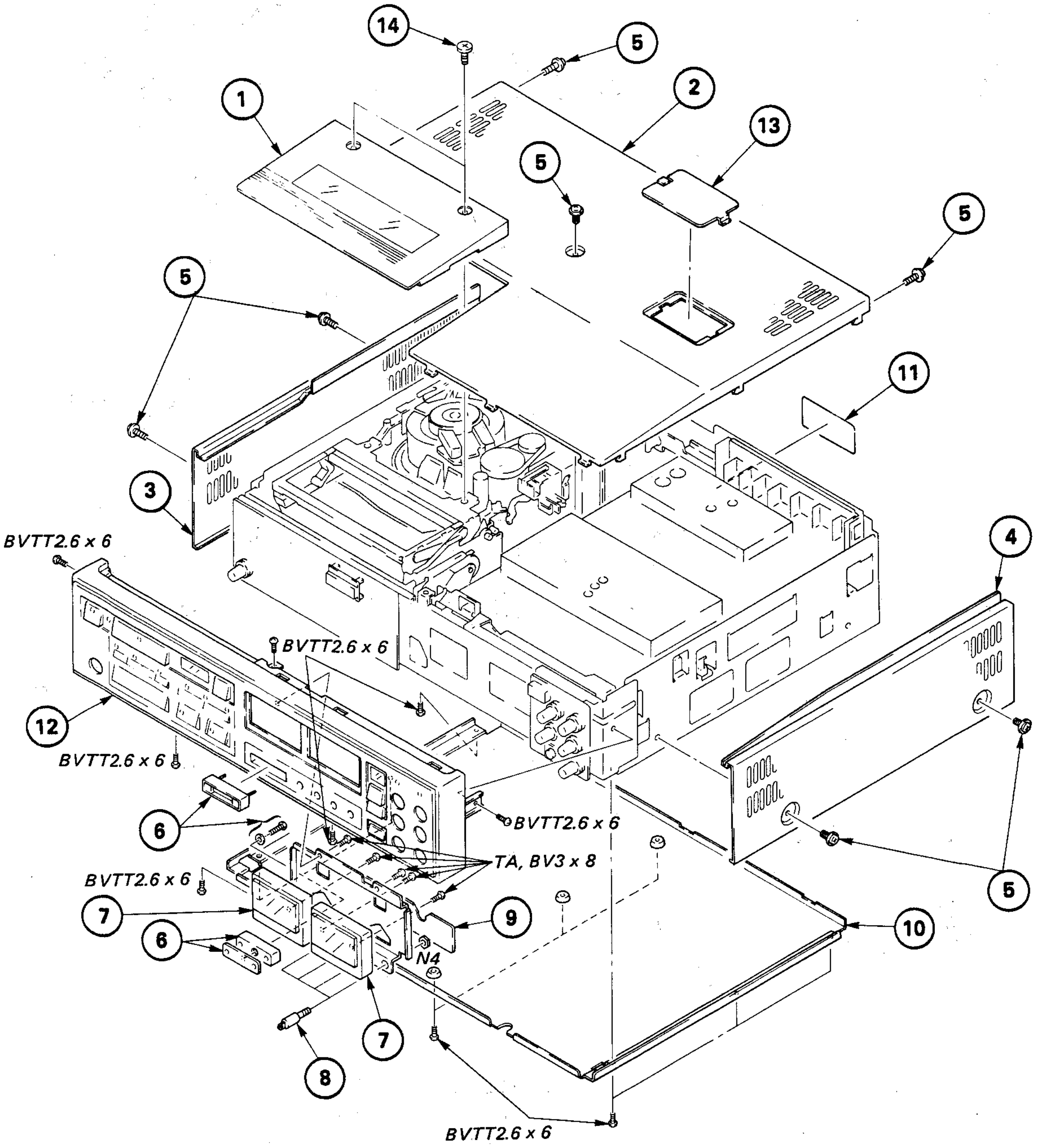

long
short
anode
cathode

SECTION 5
EXPLODED VIEWS

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " 🌢 " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

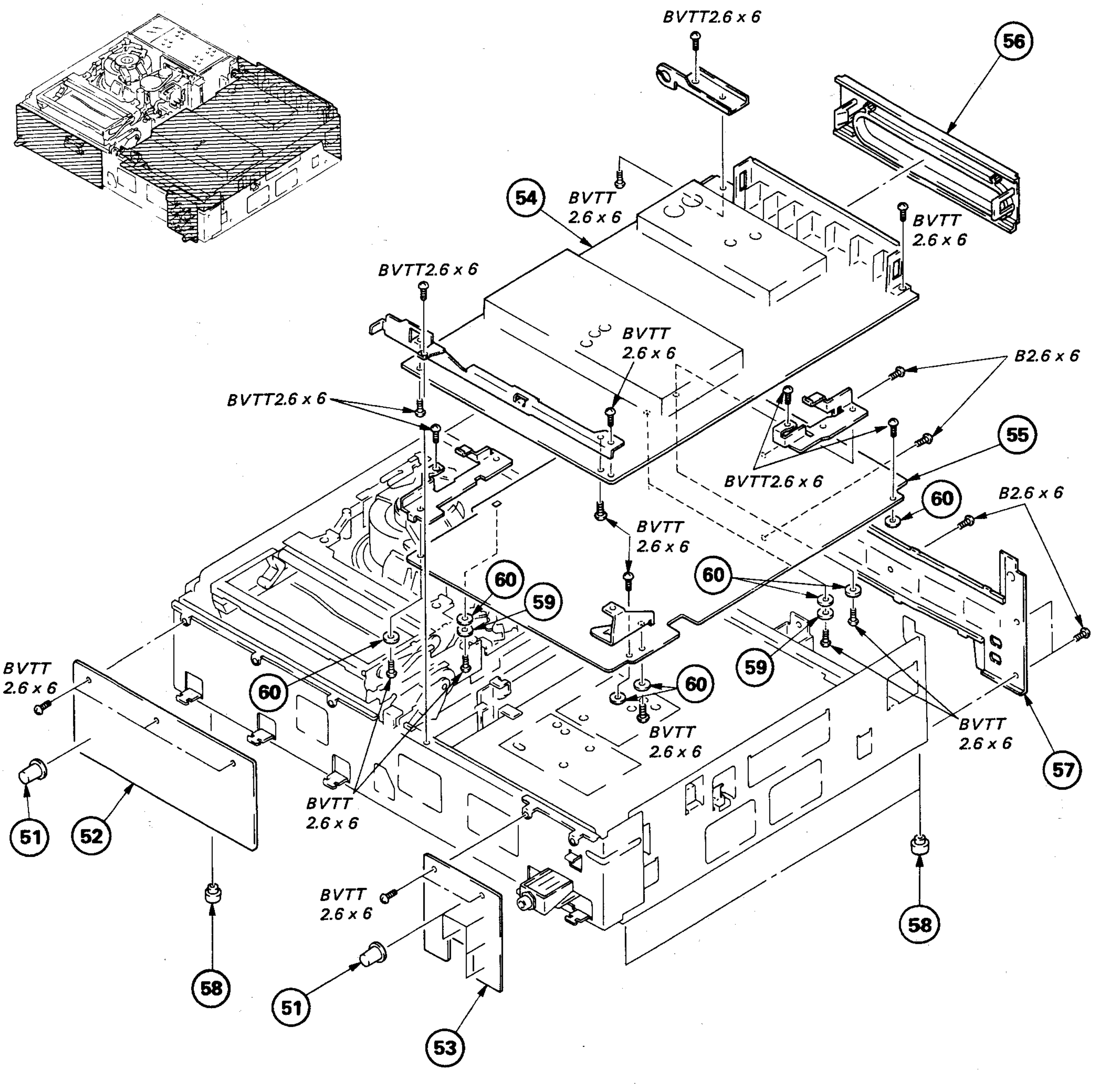
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

5-1. UPPER CASE AND FRONT PANEL ASSEMBLIES



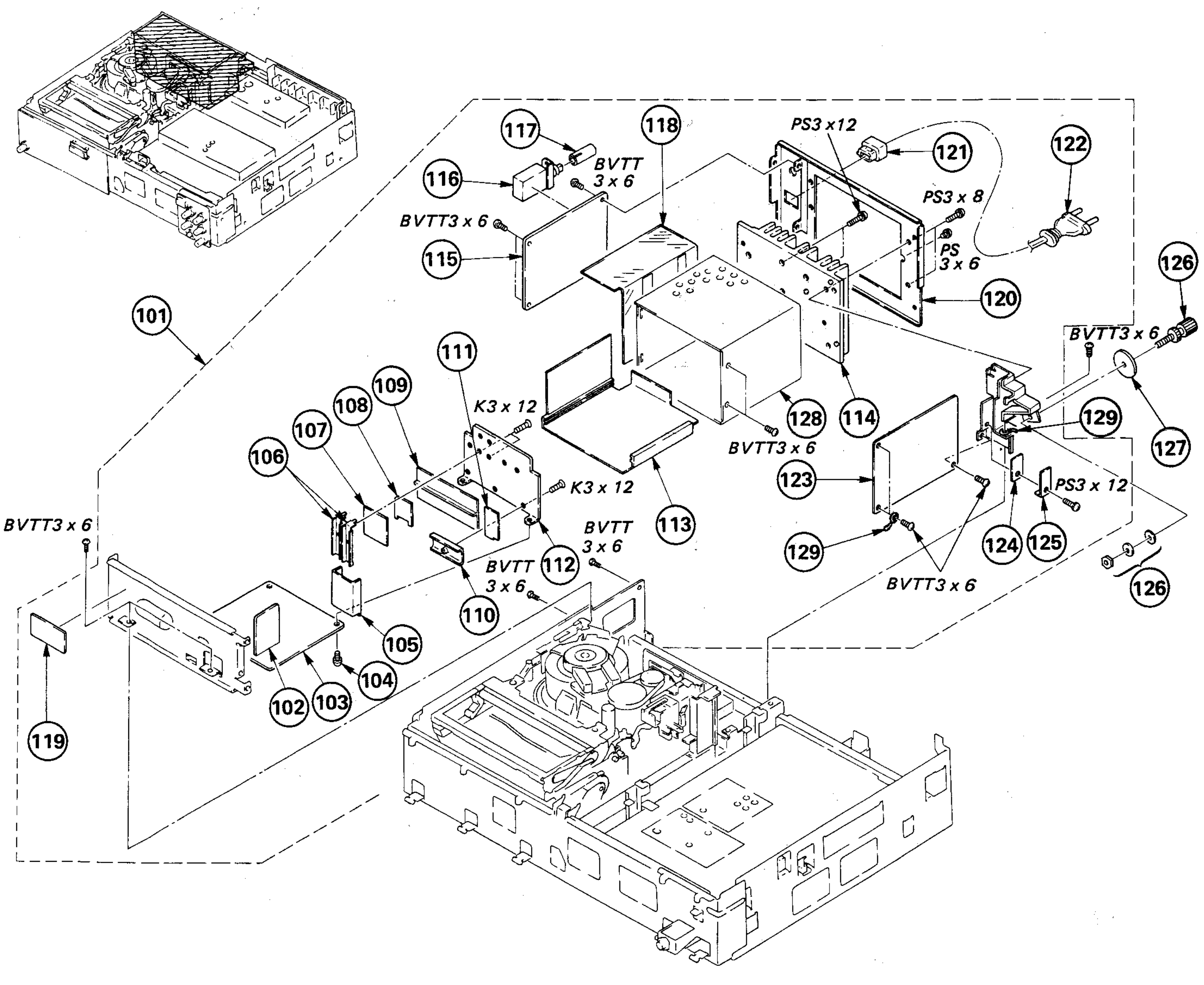
No.	Part No.	Description	Remark
1	X-3687-217-1	COVER ASSY	
2	X-3687-228-1	CASE ASSY, UPPER	
3	🌢:3-687-288-01	PLATE, SIDE, LEFT	
4	🌢:3-687-287-01	PLATE, SIDE, RIGHT	
5	3-703-354-01	SCREW (OS), CASE, CLAW	
6	1-548-131-00	COUNTER, INTEGRATING	
7	1-520-474-11	METER, LEBEL	
8	🌢:1-535-532-11	TERMINAL, CHECK	
9	🌢:1-613-312-11	TP-38 BOARD	
10	🌢:X-3687-223-1	PLATE ASSY, BOTTOM	
11	🌢:3-687-277-01	LABEL, MODEL NUMBER	
12	A-6703-477-A	PANEL BLOCK ASSY, FRONT	
13	3-687-320-01	DOOR, PRISET(P)	
14	3-669-403-21	SCREW, ORNAMENTAL	

5-2. MAIN ASSEMBLY (1)


BVTT2.6 x 6
56
54
BVTT 2.6 x 6
BVTT 2.6 x 6
BVTT2.6 x 6
BVTT 2.6 x 6
B2.6 x 6
BVTT2.6 x 6
55
BVTT2.6 x 6
60
B2.6 x 6
BVTT 2.6 x 6
60
60
59
BVTT 2.6 x 6
60
59
60
BVTT 2.6 x 6
BVTT 2.6 x 6
57
BVTT 2.6 x 6
51
52
BVTT 2.6 x 6
58
58
51
53

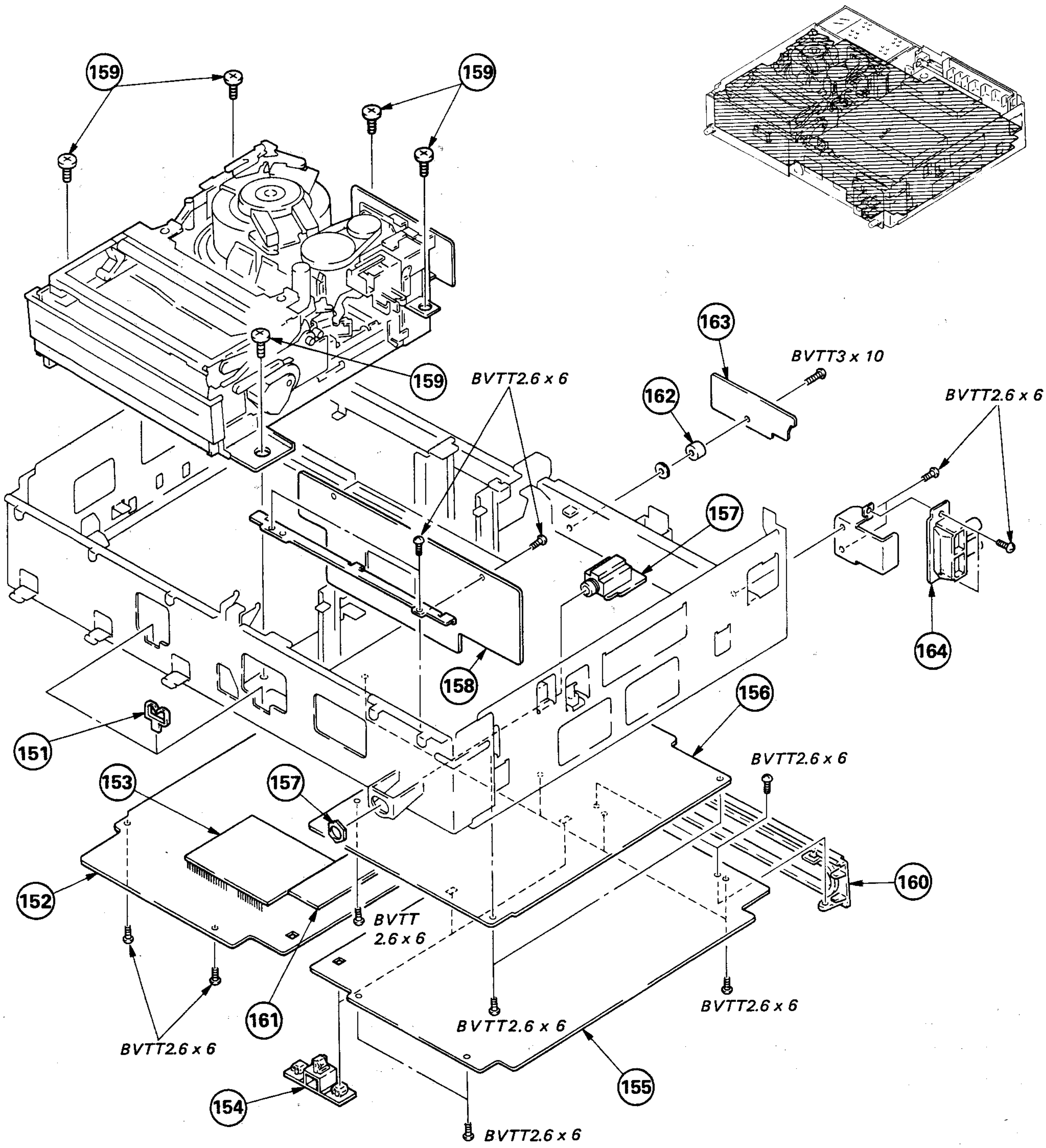
Ref.No.	Part No.	Description	Remark
51	X-3687-207-1	KNOB ASSY, VR	
52	♣:A-6716-367-A	FU-24 BOARD, COMPLETE	
53	♣:1-613-308-11	SW-34 BOARD	
54	♣:A-6711-558-A	RP-18 BOARD, COMPLETE	
55	♣:A-6713-215-A	AF-3P BOARD, COMPLETE	
56	♣:3-687-269-01	PANEL, CK	
57	3-687-285-01	PANEL, REAR	
58	3-670-155-11	LEG	
59	3-464-123-00	SPACER (DIA. 2.7X0.5)	
60	3-564-542-11	WASHER, FIBER	

5-3. POWER BLOCK ASSEMBLY


117
118
PS3 x12
121
122
116
BVTT 3 x 6
PS3 x 8
BVTT3 x 6
115
PS 3 x 6
126
120
101
BVTT3 x 6
111
109
108
K3 x 12
107
128
114
129
127
106
BVTT3 x 6
123
K3 x 12
PS3 x 12
BVTT3 x 6
BVTT 3 x 6
113
129
124
125
BVTT 3 x 6
112
110
BVTT3 x 6
126
105
104
102
103
119

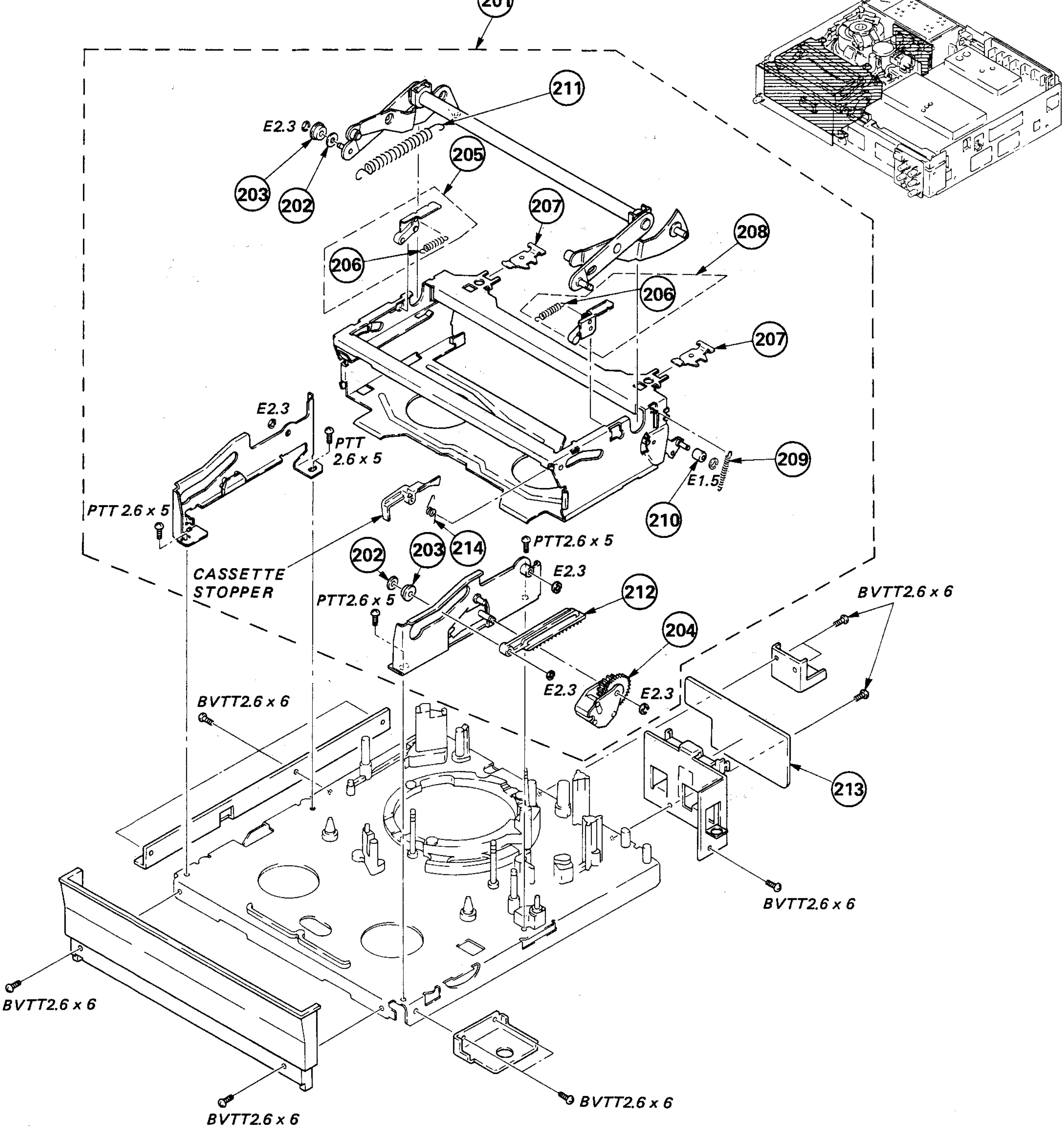
Ref.No.	Part No.	Description	Remark
101	⚠ 1-413-182-11	POWER BLOCK (SR-11UP)	102-125
102	⚠ ●:1-593-678-11	C BOARD	
103	⚠ ●:1-607-789-11	M BOARD	
104	2-430-772-01	SCREW, +PSW 3X8	
105	2-430-267-01	COVER, INSULATING	
106	●:2-430-799-01	RETAINER, TRANSISTOR	
107	2-430-209-02	SHEET, RUBBER	
108	2-430-944-02	PLATE, COPPER	
109	2-430-271-03	SHEET, RUBBER	
110	●:2-430-746-01	RETAINER, DIODE	
111	2-430-270-02	SHEET, RUBBER	
112	2-430-943-02	HEAT SINK	
113	●:2-430-266-01	HOLDER, PCB	
114	2-430-942-02	HEAT SINK	
115	⚠ ●:1-593-680-11	F BOARD	
116	⚠ 1-553-834-11	PUSH SWITCH	S601
117	4-334-115-01	KNOB, CLOCK-D	
118	2-430-268-02	COVER, F BOARD	
119	●:2-439-084-01	LABEL, MODEL NUMBER	
120	●:2-403-561-01	PANEL	
121	⚠ 3-703-244-02	STOPPER, CORD	
122	⚠ 1-534-817-12	CORD, POWER	
123	⚠ ●:1-613-361-11	D BOARD	
124	2-430-269-01	SHEET, RUBBER	
125	●:2-430-945-01	RETAINER, IC	
126	●:1-535-531-21	TERMINAL, GROUND	
127	●:3-687-214-01	PLATE, MASK	
128	●:2-403-496-01	SHIELD CASE	
129	2-430-947-01	EARTH LUG	

5-4. MAIN ASSEMBLY (2)


159
159
159
163
BVTT3 x 10
BVTT2.6 x 6
162
BVTT2.6 x 6
157
164
158
156
151
BVTT2.6 x 6
153
157
160
152
BVTT
2.6 x 6
161
BVTT2.6 x 6
BVTT2.6 x 6
BVTT2.6 x 6
154
155
BVTT2.6 x 6

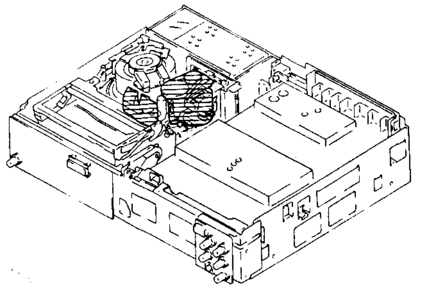
Ref.No.	Part No.	Description	Remark
151	♠:4-310-385-00	HOLDER, WIRE	
152	♠:A-6715-235-A	SS-29 BOARD, COMPLETE	153, 161
153	♠:1-613-310-11	SC-2 BOARD	
154	♠:3-671-187-00	CLIP, ANCHOR	
155	♠:A-6711-559-A	RV-7P BOARD, COMPLETE	
156	♠:A-6713-213-A	AM-6 BOARD, COMPLETE	
157	♠:1-613-313-11	HP-9 BOARD	
158	♠:A-6729-047-A	RR-5 BOARD, COMPLETE	
159	3-687-263-01	SCREW, STEP	
160	♠:3-687-286-01	PANEL, CONNECTOR	
161	♠:1-613-621-12	SC-3 BOARD	
162	4-325-527-00	ROLLER	
163	♠:1-613-305-11	HN-1 BOARD	
164	♠:1-613-306-11	HN-2 BOARD	

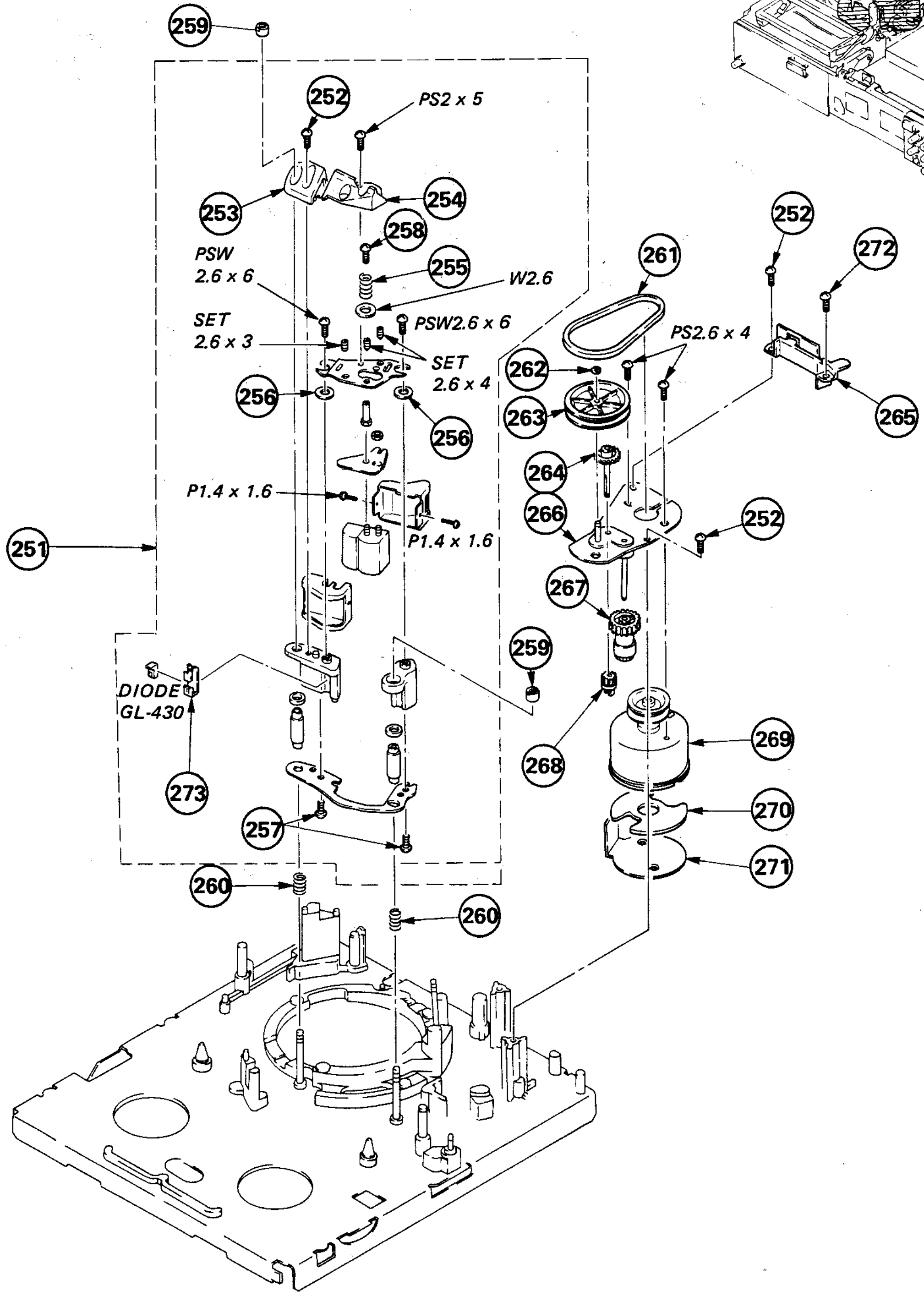
5-5. CASSETTE COMPARTMENT ASSEMBLY


201
211
E2.3
205
203
202
207
208
206
206
207
E2.3
PTT 2.6 x 5
209
E1.5
PTT 2.6 x 5
210
214
PTT2.6 x 5
202
203
CASSETTE STOPPER
E2.3
212
PTT2.6 x 5
BVTT2.6 x 6
204
E2.3
E2.3
BVTT2.6 x 6
213
BVTT2.6 x 6
BVTT2.6 x 6
BVTT2.6 x 6
BVTT2.6 x 6

Ref.No.	Part No.	Description	Remark
201	♠:A-6751-203-A	CASSETTE COMPARTMENT ASSY (P)	202-212
202	3-701-439-01	WASHER	
203	♠:3-687-238-01	ROLLER (A), ARM	
204	3-676-638-00	DAMPER, CASSETTE COMPARTMENT	
205	♠:X-3669-334-0	STOPPER (L) ASSY, BEARING	206
206	3-669-386-00	SPRING, TENSION	
207	♠:3-669-423-00	STOPPER, COVER	
208	♠:X-3669-335-0	STOPPER (R) ASSY, BEARING	206
209	3-570-898-00	SPRING, TENSION	
210	3-669-381-00	ROLLER, OPEN, LID	
211	3-669-379-00	SPRING, TENSION	
212	3-687-258-01	GEAR (P), DAMPER	
213	♠:1-613-309-11	RL-19 BOARD	
214	3-669-405-00	SPRING, TORSION	

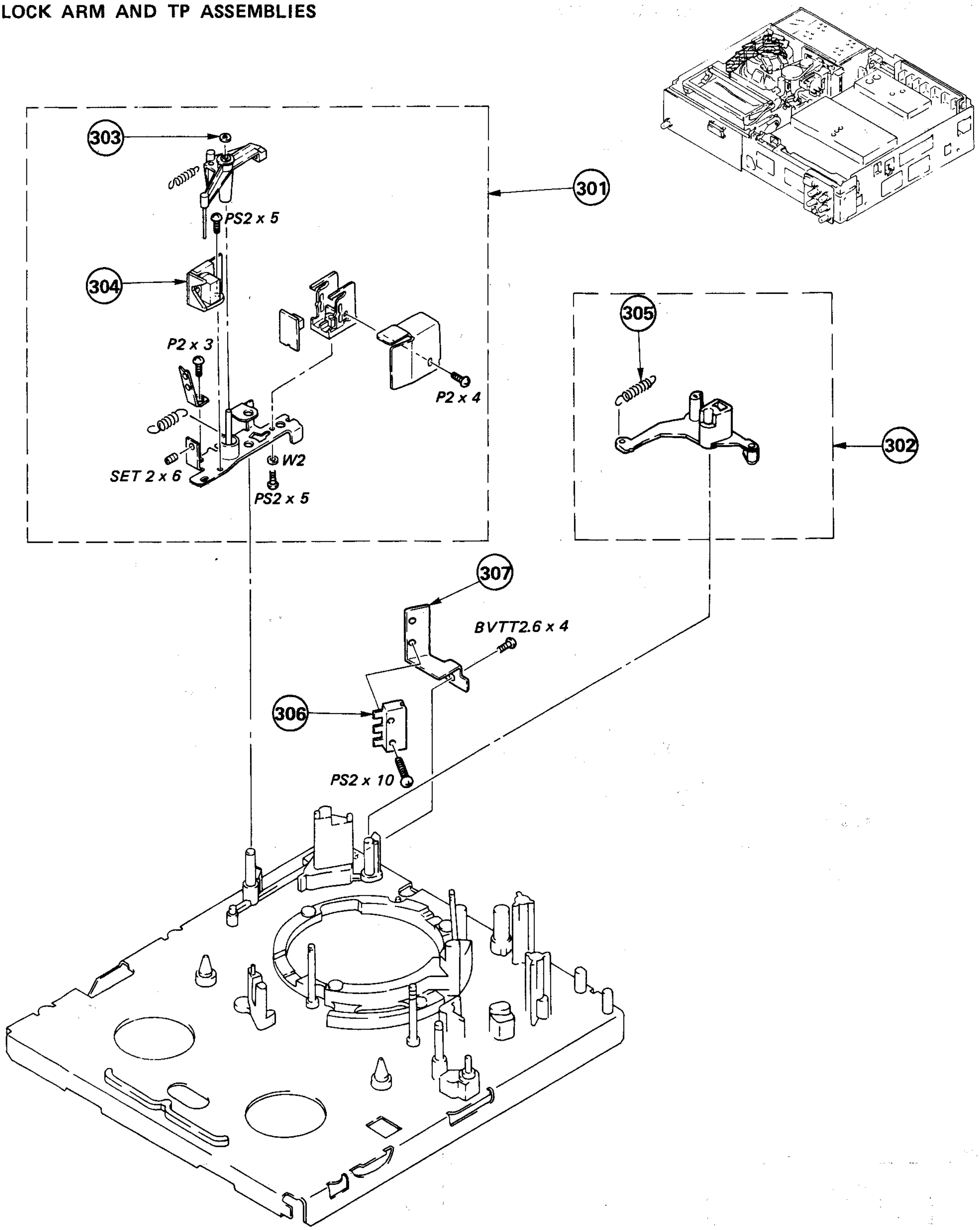
5-6. THREADING MOTOR AND ACE HEAD ASSEMBLIES




259
252
PS2 x 5
253
254
258
PSW
2.6 x 6
255
W2.6
SET
2.6 x 3
PSW2.6 x 6
SET
2.6 x 4
256
256
P1.4 x 1.6
P1.4 x 1.6
251
DIODE
GL-430
273
257
260
260
259
261
252
272
PS2.6 x 4
262
263
265
264
266
252
267
268
269
270
271

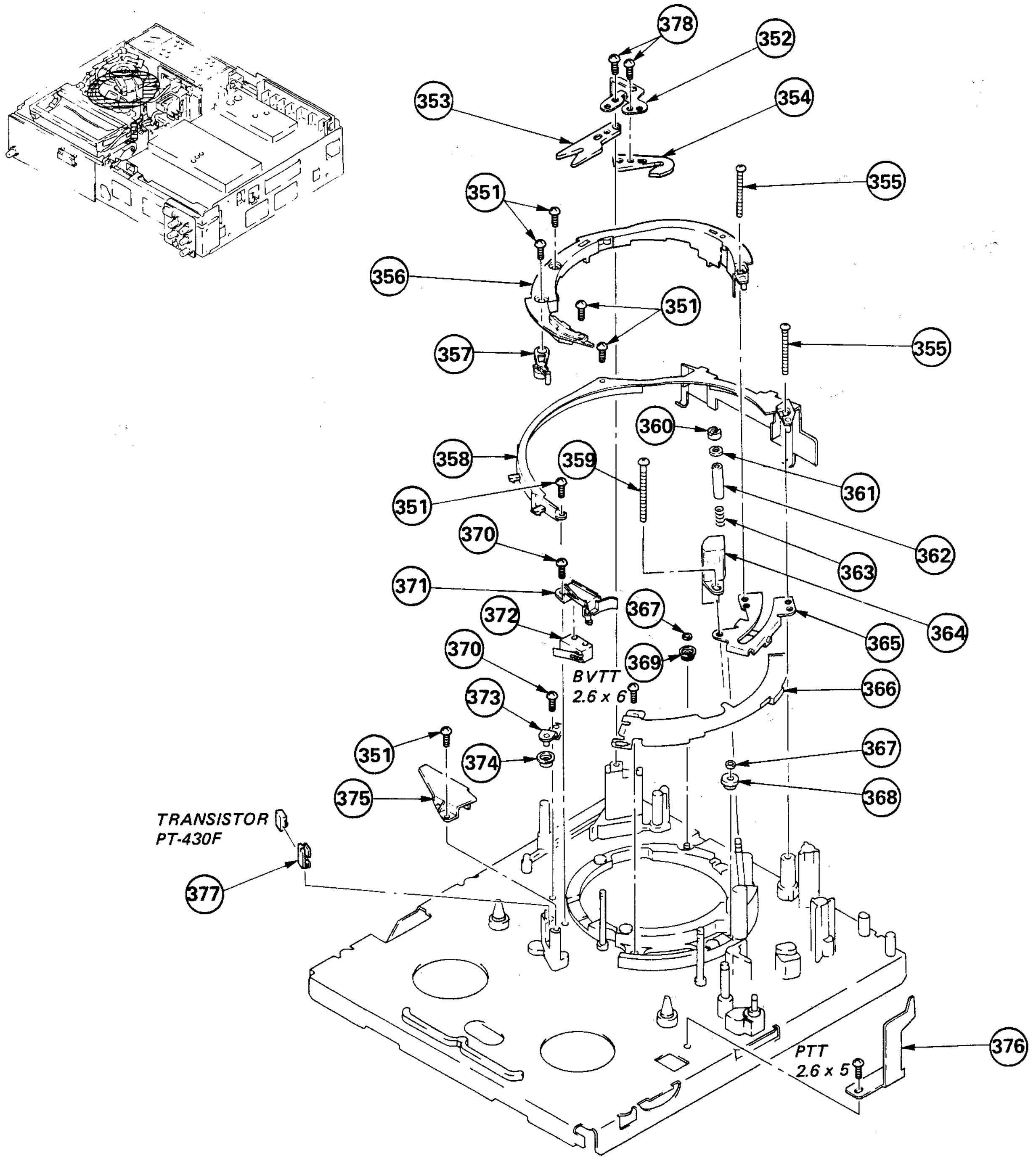
No.	Part No.	Description	Remark
251	A-6761-073-A	ACE ASSY	252-258, 273
252	3-669-480-11	+ PTPWH 2	
253	♠:3-669-537-03	SLOPE (LEFT)	
254	♠:3-669-541-00	SLOPE (RIGHT)	
255	♠:3-669-316-00	SPRING, COMPRESSION	
256	3-669-598-00	WASHER, CTL	
257	3-676-660-00	+P 2X8	
258	3-679-362-00	SCREW (M2X4), PAN	
259	3-669-318-00	NUT, ADJUSTMENT, GUIDE	
260	3-669-317-00	SPRING, COMPRESSION	
261	3-669-327-00	BELT, RUBBER	
262	3-669-465-00	WASHER (1.5), STOPPER	
263	X-3670-087-0	PULLEY ASSY, GEAR	
264	3-669-332-00	GEAR (BA)	
265	♠:3-671-826-00	CLAMP (M), HARNESS	
266	X-3687-211-1	CHASSIS ASSY (D), L MOTOR	
267	X-3669-321-0	GEAR (C) ASSY	
268	3-669-333-00	GEAR (BC)	
269	A-6737-090-A	MOTOR ASSY, L	
270	♠:1-605-071-00	LM-8 BOARD	
271	♠:3-669-613-00	INSULATOR, L MOTOR	
272	3-669-607-11	+PSW (SMALL ROUND) (2.6)	
273	♠:3-676-618-00	HOLDER, SENSOR	

5-7. LOCK ARM AND TP ASSEMBLIES


303
301
PS2 x 5
304
P2 x 3
P2 x 4
305
302
SET 2 x 6
W2
PS2 x 5
307
BVTT2.6 x 4
306
PS2 x 10

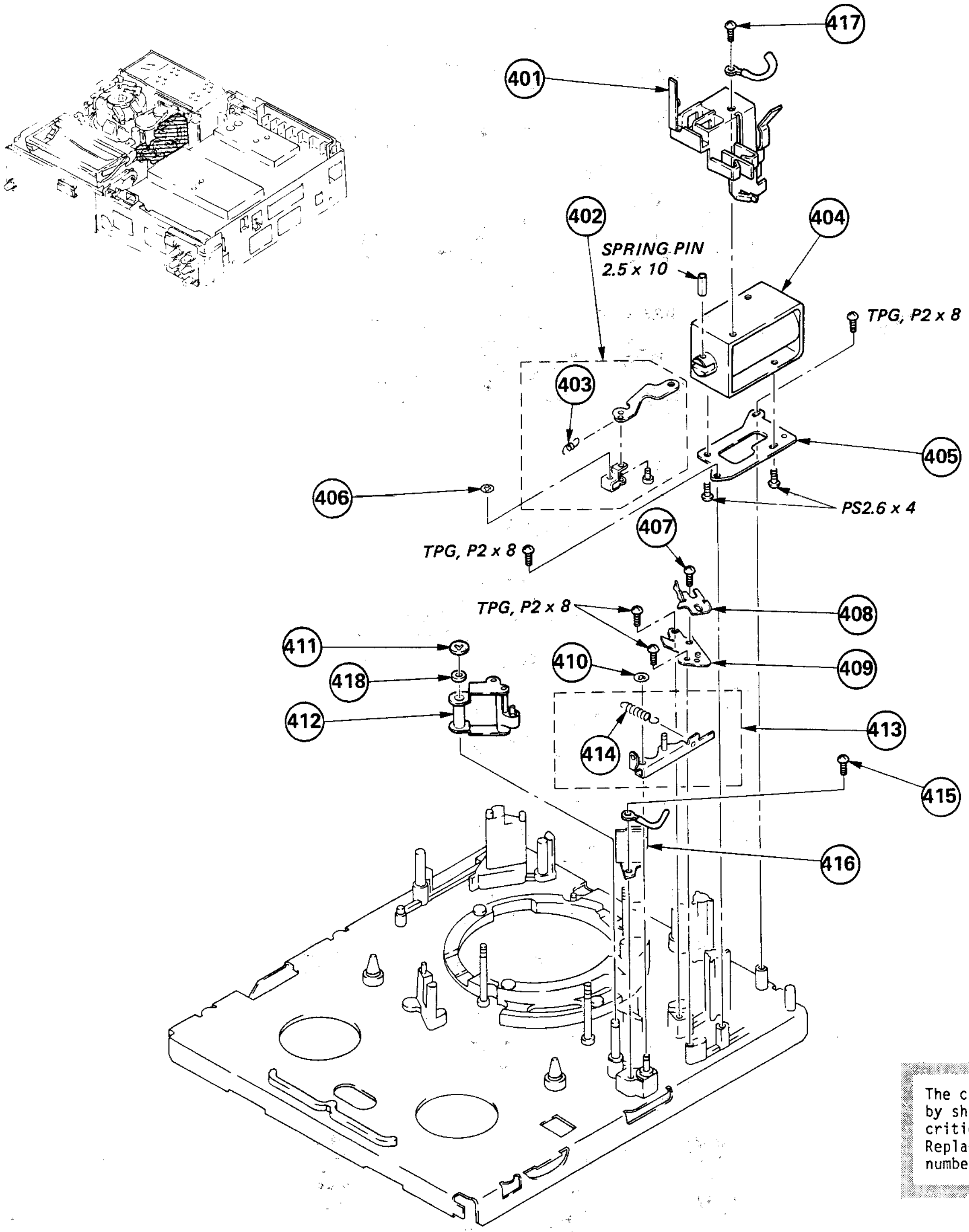
Ref.No.	Part No.	Description	Remark
301	A-6742-041-A	TP ASSY	303, 304
302	X-3669-351-4	ARM ASSY, LOCK	305
303	3-669-465-00	WASHER (1.5), STOPPER	
304	1-235-054-00	COIL, SENSOR, S	
305	3-531-860-00	SPRING, TENSION	
306	1-553-539-00	SWITCH, MICRO (LOADING END)	
307	●:3-672-542-00	BRACKET, SWITCH, LE	

5-8. ULE SWITCH AND SHUTTLE GUIDE ASSEMBLIES


378
352
353
354
355
351
356
351
357
355
360
358
359
361
351
362
370
363
371
364
367
372
365
370
369
BVTT
2.6 x 6
366
373
367
351
374
368
375
TRANSISTOR
PT-430F
377
PTT
2.6 x 5
376

Ref.No.	Part No.	Description	Remark
351	3-669-480-11	+ PTPWH 2	
352	♠:3-672-540-00	PLATE, GROUND, TAPE GUIDE	
353	♠:3-669-618-00	PLATE (2), ADJUST	
354	♠:3-672-507-00	PLATE (3-1), ADJUSTMENT	
355	3-669-466-00	SCREW (M 2.6)	
356	♠:3-669-584-00	GUIDE (1), SHUTTLE	
357	X-3669-327-0	ARM ASSY, SWITCH, ULE	
358	3-676-585-11	GUIDE (1) (B), SHUTTLE	
359	3-669-606-00	SCREW (2.6)	
360	3-669-446-00	NUT, GUIDE, NO. 6	
361	3-679-910-00	FLANGE (S), GUIDE, NUMBER 6	
362	3-669-445-00	SPACER, GUIDE, NO. 6	
363	3-669-615-00	SPRING, COMPRESSION	
364	8-825-508-10	HEAD, FE	
365	♠:X-3679-263-1	BASE ASSY, SLANT	
366	♠:3-687-271-01	LINER (F), PIN LINK	
367	3-669-465-00	WASHER (1.5), STOPPER	
368	3-669-597-00	ROLLER (B), RING	
369	3-669-630-00	ROLLER (C), RING	
370	3-669-607-11	+PSW (SMALL ROUND) (2.6)	
371	♠:3-669-355-00	HOLDER, SWITCH, ULE	
372	1-553-718-00	SWITCH, MICRO (UNLOADING END)	
373	♠:X-3669-329-0	PLATE ASSY, ADJUSTMENT	
374	3-669-360-00	ROLLER, RING	
375	3-669-476-04	PLATE, GUIDE	
376	♠:3-687-318-00	BRACKET, OPEN, LID (F)	
377	3-676-618-00	HOLDER, SENSOR	
378	3-669-480-00	+ PTPWH 2	

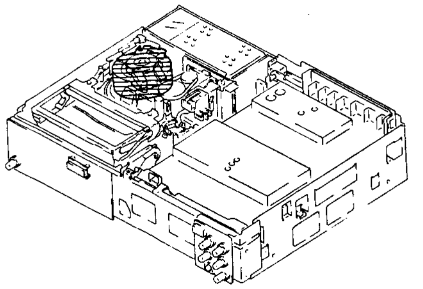
5-9. PINCH ROLLER SOLENOID ASSEMBLY

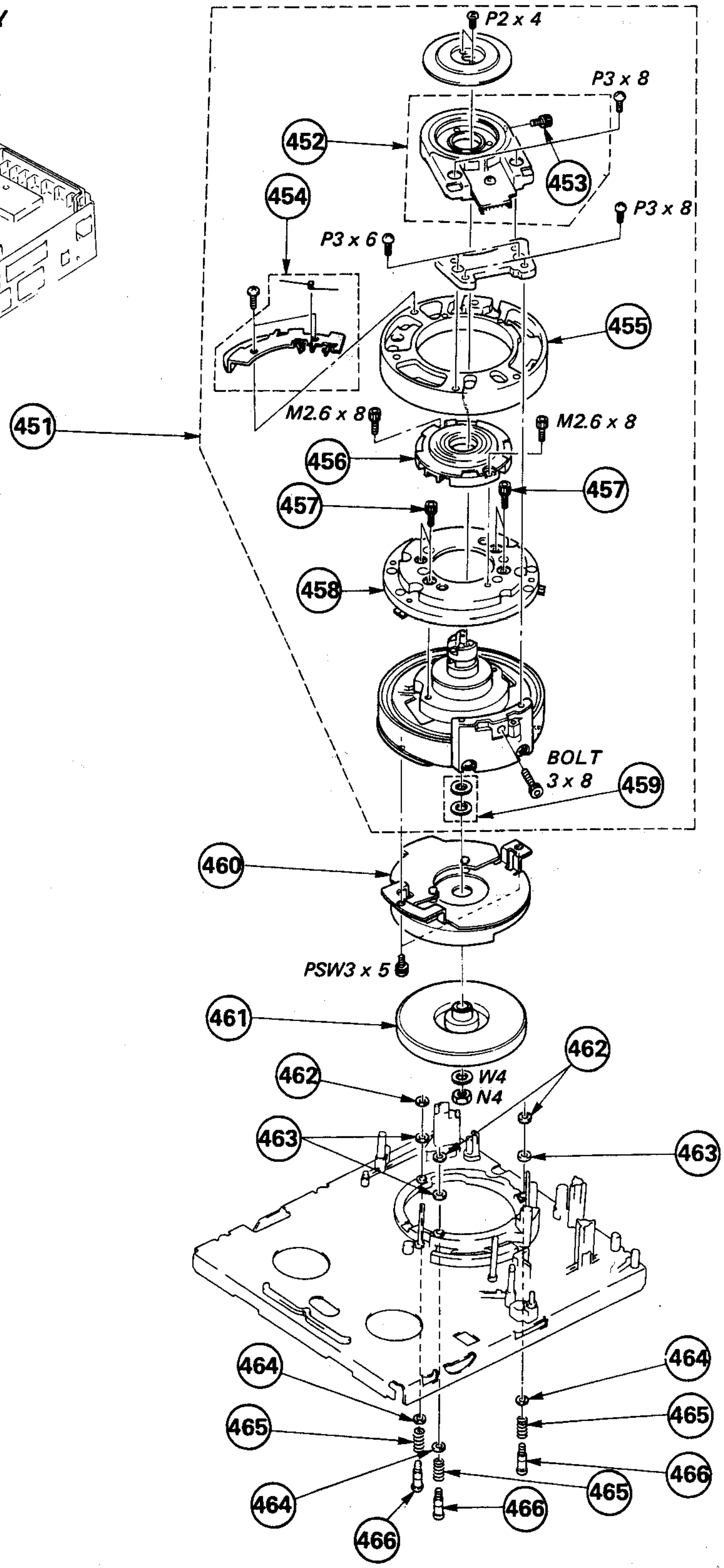

417
401
402
404
SPRING PIN
2.5 x 10
TPG, P2 x 8
403
405
406
PS2.6 x 4
407
TPG, P2 x 8
TPG, P2 x 8
408
411
410
409
418
412
413
414
415
416

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
401	♠:3-671-827-00	CLAMP (D), HARNESS	
402	X-3670-062-0	ARM ASSY, PINCH SOLENOID	403
403	3-669-440-00	SPRING, TENSION	
404	⚠.1-454-282-12	SOLENOID, PLUNGER (PINCH)	
405	♠:3-669-459-00	BRACKET, SOLENOID	
406	3-669-465-00	WASHER (1.5), STOPPER	
407	3-669-607-00	+PSW (SMALL ROUND) 2.6	
408	♠:3-669-462-00	PLATE, ADJUSTMENT, LIMITER, PINCH	
409	♠:3-669-349-00	PLATE, LOCK, T	
410	3-669-595-00	WASHER (2), STOPPER	
411	3-669-596-00	WASHER (2.3), STOPPER	
412	♠:X-3670-059-0	ARM ASSY, PINCH PRESS	
413	♠:X-3670-057-0	ARM ASSY, PINCH LIMITTER	414
414	3-515-170-00	SPRING, TENSION	
415	3-669-480-11	+ PTPWH 2	
416	♠:1-235-055-32	COIL SENSOR, T	
417	3-669-607-11	+PSW (SMALL ROUND) (2.6)	
418	3-701-439-01	WASHER	

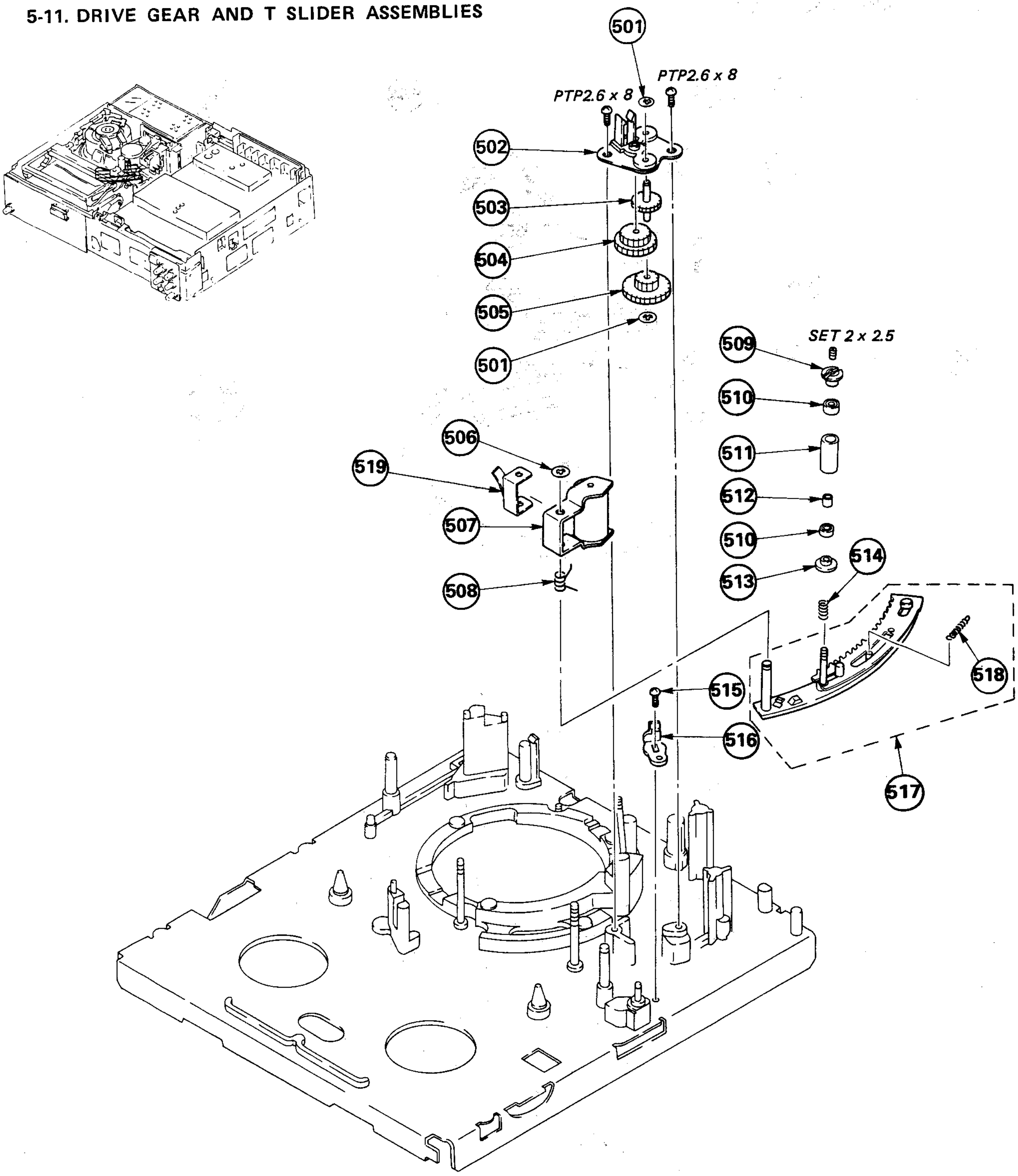
5-10. DRUM ASSEMBLY




P2 x 4
P3 x 8
452
453
P3 x 8
454
P3 x 6
455
451
M2.6 x 8
M2.6 x 8
456
457
457
458
BOLT
3 x 8
459
460
PSW3 x 5
461
462
W4
N4
462
463
463
464
464
465
465
466
465
466
466

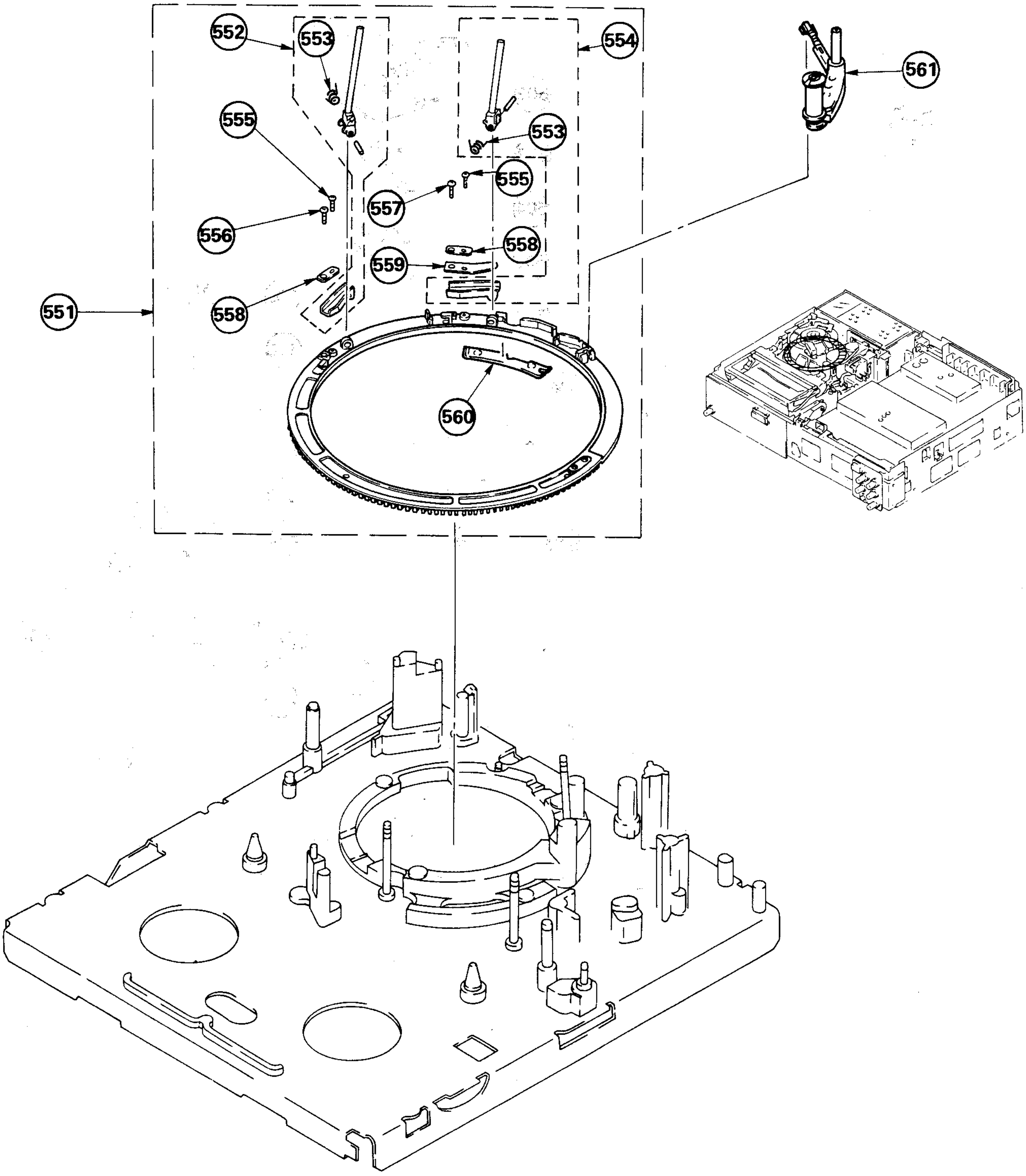
No.	Part No.	Description	Remark
451	A-6050-290-A	DRUM ASSY (DSH-48D-R)	452-459
452	A-6050-237-A	GUIDE ARM ASSY	453
453	3-681-360-01	BOLT, HEX, SOCKET (WASHER) 2.6X8	
454	A-6760-066-B	SPRING ASSY, TAPE RETAINER	
455	A-6760-178-A	DRUM SUB ASSY, UPPER	
456	X-3681-312-1	ROTARY COUPLER ASSY	
457	3-669-157-00	BOLT (WASHER)(2.6X8)	
458	A-6762-186-A	DISK ASSY (DSR-48B-R)	
459	X-3669-105-0	SPACER BLOOK ASSY	
460	X-2621-204-2	STATOR ASSY, D	
461	X-2621-202-0	ROTOR ASSY, D	
462	3-669-646-00	SPACER, DRUM	
463	3-669-646-11	SPACER, DRUM	
464	3-669-600-11	WASHER, FLAT (3.5)	
465	3-429-123-00	SPRING	
466	3-669-302-00	SCREW, FITTING	

5-11. DRIVE GEAR AND T SLIDER ASSEMBLIES


501
PTP2.6 x 8
PTP2.6 x 8
502
503
504
505
501
SET 2 x 2.5
509
510
511
512
510
513
514
506
519
507
508
515
516
518
517

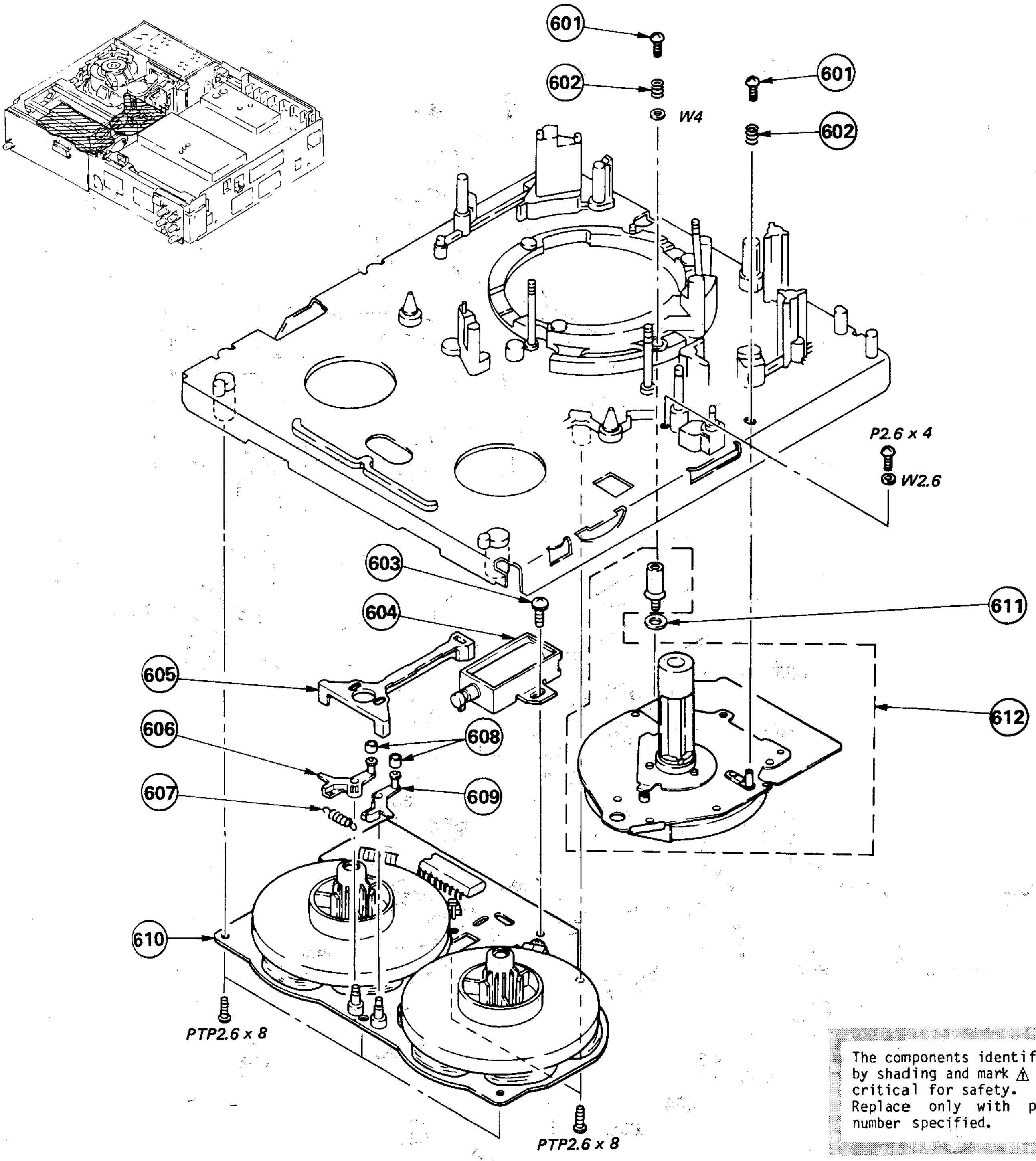
No.	Part No.	Description	Remark
501	3-669-465-00	WASHER (1.5), STOPPER	
502	X-3687-201-1	CHASSIS ASSY, GEAR, DRIVE	
503	X-3669-305-0	GEAR (F) ASSY	
504	3-669-338-00	GEAR (E)	
505	3-669-337-00	GEAR (D)	
506	3-669-596-00	WASHER (2.3), STOPPER	
507	X-3670-063-0	ARM ASSY, PINCH ROLLER	
508	3-669-444-00	SPRING, TORSION	
509	3-687-315-01	UPPER (C), GUIDE, FLANGE	
510	3-669-443-00	BEARING, BALL (NO FLANGE)	
511	3-669-438-11	ROLLER (#9), GUIDE	
512	3-657-841-31	SPACER (2X2.5)	
513	3-669-432-00	FLANGE (LOWER), GUIDE	
514	3-669-452-00	SPRING, COMPRESSION	
515	3-669-607-31	+PSW (SMALL ROUND) (2.6)	
516	♠:3-669-350-00	STOPPER, SLIDER	
517	♠:X-3687-227-1	GEAR ASSY, SLIDER	518
518	3-549-014-00	SPRING, TENSION	
519	♠:3-674-345-00	SPRING	

5-12. THREADING RING ASSEMBLY


552
553
554
561
555
553
555
557
556
558
559
551
558
560

No.	Part No.	Description	Remark
551	X-3687-224-1	RING ASSY, LOADING, S	552-560
552	♠:X-3687-203-1	HOLDER BLOCK ASSY, #2 GUIDE	553
553	3-672-581-00	SPRING	
554	♠:X-3687-202-1	HOLDER BLOCK ASSY, #3 GUIDE	553
555	3-669-478-00	SCREW (1X3), TAPPING	
556	3-672-586-00	SCREW (1.4X3), TAPPING	
557	3-669-479-11	SCREW (1.4X3.5), TAPPING	
558	♠:3-669-472-02	RETAINER, SPRING, LEAF	
559	3-687-245-01	SPRING	
560	♠:3-672-594-00	PLATE, INSERT	
561	A-6750-167-A	SHUTTLE BLOCK ASSY, LOADING	

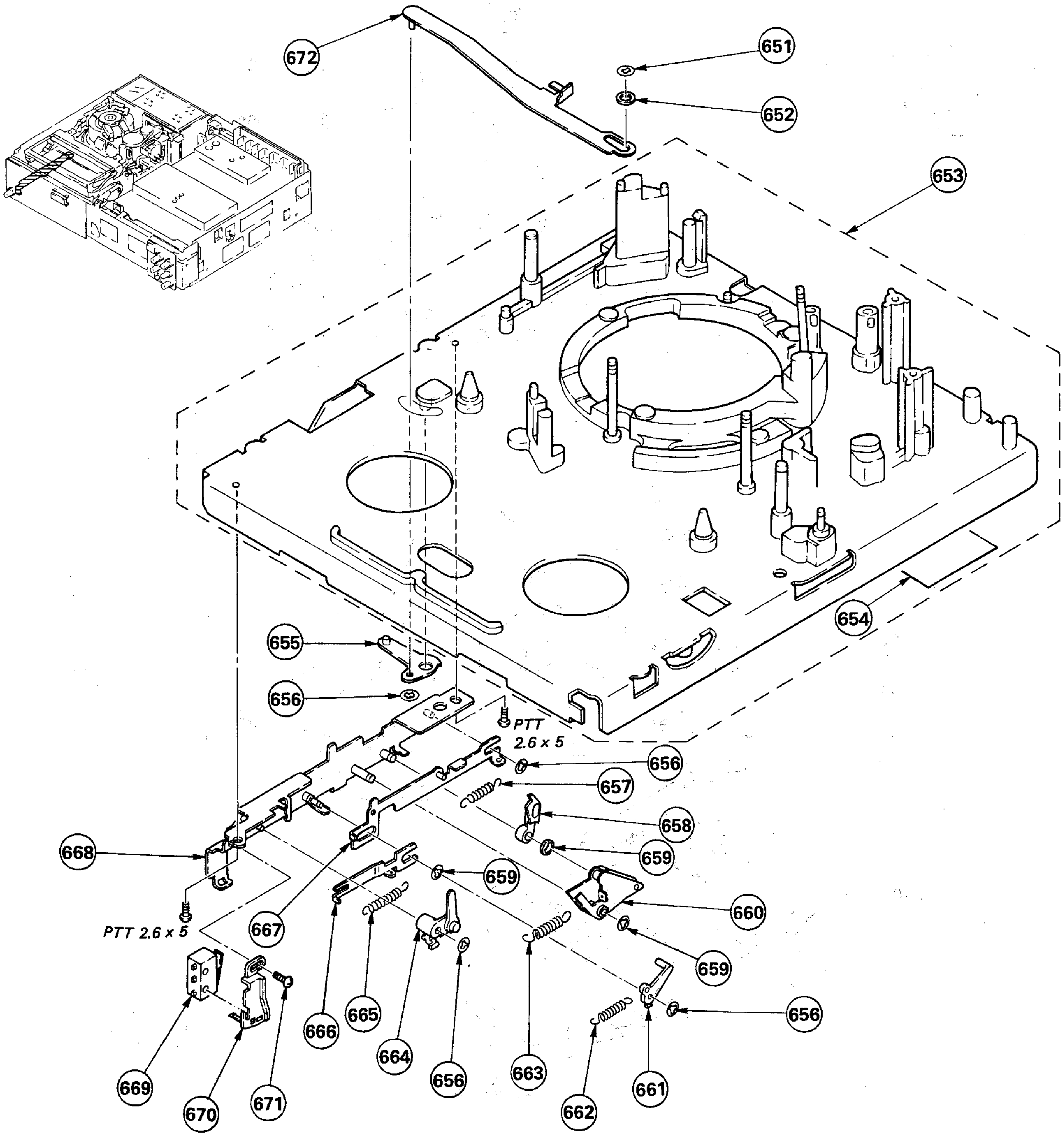
5-13. CAPSTAN MOTOR ASSEMBLY


601
602
W4
601
602
P2.6 x 4
W2.6
603
604
611
605
612
606
608
607
609
610
PTP2.6 x 8
PTP2.6 x 8

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
601	3-669-633-00	SCREW, + PW2	
602	3-669-602-00	SPRING, COMPRESSION	
603	3-669-663-00	+PSW 2.6	
604	⚠1-454-281-31	SOLENOID, PLUNGER (BRAKE)	
605	●:3-669-530-00	ARM, BRAKE	
606	●:3-669-304-00	BRAKE, S	
607	3-491-360-00	SPRING, TENSION	
608	3-669-305-00	BUSHING	
609	●:3-669-303-00	BRAKE, T	
610	8-838-021-21	MOTOR, DC (BHF-1800C)(REEL)	
611	3-669-697-00	SPACER, CAPSTAN	
612	8-838-027-12	MOTOR, DC (BHF-1901B)(CAPSTAN)	

5-14. CASSETTE COMPARTMENT LOCK ASSEMBLY


672
651
652
653
654
655
656
PTT 2.6 x 5
656
657
658
659
668
659
660
659
PTT 2.6 x 5
667
656
669
670
671
666
665
664
656
663
662
661

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
651	3-669-595-00	WASHER (2), STOPPER		662	3-509-123-00	SPRING, TENSION	
652	3-701-438-21	WASHER		663	3-489-310-XX	SPRING, TENSION	
653	♠:X-3687-226-1	CHASSIS ASSY, MECHANICAL	654	664	♠:X-3669-320-0	LEVER ASSY, CI	
654	♠:3-669-599-00	INSULATOR		665	3-570-896-00	SPRING, TENSION	
655	♠:X-3669-331-0	LEVER ASSY, RELEASE		666	♠:3-669-671-00	PLATE, SLIDE, SWITCH	
656	3-669-465-00	WASHER (1.5), STOPPER		667	♠:X-3669-376-0	PLATE ASSY, SLIDE, RELEASE	
657	3-480-160-XX	SPRING, TENSION		668	♠:X-3669-378-0	CHASSIS ASSY, LOCK	
658	♠:3-669-670-00	LEVER, LOCK, L		669	1-553-718-00	SWITCH, MICRO (CASSETTE IN)	
659	3-669-596-00	WASHER (2.3), STOPPER		670	♠:3-669-422-00	HOLDER, MICRO SWITCH	
660	♠:X-3669-377-0	LEVER ASSY, LOCK		671	3-672-561-00	+PSW 2X4	
661	♠:3-669-414-00	LEVER, HOLDING, IL		672	♠:X-3669-366-0	PLATE ASSY, SLIDE, IL	

5-15. HARDWARE LIST

SCREW

7-621-255-15	SCREW +P 2X3
7-621-259-25	SCREW +P 2.6X4
7-621-759-45	+PSW, 2.6X6
7-621-773-95	SCREW +B 2.6X6
7-621-775-10	SCREW +B 2.6X4
7-627-551-08	SCREW, PRECISION +P 1.4X1.6
7-627-551-28	SCREW, PRECISION +P 1.4X2.5
7-628-253-05	SCREW +PS 2X4
7-628-253-15	SCREW +PS 2X5
7-628-253-45	SCREW +PS 2X10
7-628-253-95	SCREW +PS 2.6X4
7-685-102-11	SCREW +P 2X4 NON-SLIT TYPE 2
7-685-133-11	SCREW +P 2.6X6 TYPE1
7-685-134-11	SCREW +P 2.6X8 TYPE2 NON-SLIT
7-685-646-71	SCREW +BVTP 3X8 TYPE2 IT-3
7-685-791-01	SCREW +PTT 2.6X5 (S)
7-685-871-01	SCREW +BVTT 3X6 (S)
7-685-873-01	SCREW +BVTT 3X10 (S)

SET-SCREW

7-621-710-55	SET-SCREW, SLOT 2X6 CONE POINT
7-621-712-26	SET-SCREW, SLOT 2.6X3FLAT POINT
7-621-712-35	SET-SCREW, SLOT 2.6X4CONE POINT
7-621-712-36	SET-SCREW, SLOT 2.6X4FLAT POINT
7-621-731-08	SET-SCT, HEX. 2X2.5, FLAT POINT

NUT

7-622-205-05	NUT M2 TYPE2
7-684-024-04	N 4, TYPE 2

STOP RING

7-624-102-04	STOP RING 1.5, TYPE -E
7-624-105-04	STOP RING 2.3, TYPE -E

SPRING PIN

7-626-302-11	SPRING PIN 2.5X10

TAPPING

7-685-105-11	TPG +P 2X8, TYPE 2, NON-SLIT

WASHER

7-688-001-01	W 2, SMALL
7-688-002-11	W 2.6, MIDDLE
7-688-004-01	W 4, SMALL

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.
- Items marked " ♠ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS
- MF : μF, PF : μμF

RESISTORS
- All resistors are in ohms
- F : nonflammable

COILS
- MMH : mH, UH : μH

Ref.No	Part NO.	Description	Remark
♠:	A-6711-558-A	RP-18 BOARD, COMPLETE **********************	
	1-536-868-11	TERMINAL BOARD, CONTROL PANEL	
♠:	3-684-084-01	CASE (B) (MAIN), SHIELD, RP	
♠:	3-684-085-01	LID, UPPER, RP SHIELD CASE (B)	
♠:	3-684-086-01	LID, BOTTOM, RP SHIELD CASE(B)	
♠:	3-687-304-01	LID, UPPER, SHIELD CASE	
♠:	3-687-307-01	LID, BOTTOM, SHIELD CASE	
♠:	3-687-308-01	CASE (MAIN), SHIELD, RP-A	

BPF

Ref.No	Part NO.	Description
BPF001	1-235-366-11	B.P.F

CAPACITOR

Ref.No	Part NO.	Description			Remark
C301	1-161-059-00	CERAMIC	0.047MF	10%	25V
C302	1-123-330-00	ELECT	22MF	20%	16V
C303	1-161-059-00	CERAMIC	0.047MF	10%	25V
C304	1-161-059-00	CERAMIC	0.047MF	10%	25V
C305	1-161-059-00	CERAMIC	0.047MF	10%	25V
C306	1-123-318-00	ELECT	33MF	20%	10V
C307	1-123-380-00	ELECT	1MF	20%	50V
C308	1-123-380-00	ELECT	1MF	20%	50V
C309	1-161-013-00	CERAMIC	0.01MF	10%	25V
C313	1-161-013-00	CERAMIC	0.01MF	10%	25V
C314	1-161-057-00	CERAMIC	0.033MF	10%	25V
C315	1-102-973-00	CERAMIC	100PF	5%	50V
C316	1-161-059-00	CERAMIC	0.047MF	10%	25V
C317	1-161-059-00	CERAMIC	0.047MF	10%	25V
C318	1-123-381-00	ELECT	2.2MF	20%	50V
C319	1-161-059-00	CERAMIC	0.047MF	10%	25V
C320	1-161-055-00	CERAMIC	0.022MF	10%	25V
C321	1-123-356-00	ELECT	10MF	20%	16V
C322	1-102-951-00	CERAMIC	15PF	5%	50V
C323	1-102-951-00	CERAMIC	15PF	5%	50V
C324	1-161-013-00	CERAMIC	0.01MF	10%	25V
C325	1-102-114-00	CERAMIC	470PF	10%	50V
C326	1-161-013-00	CERAMIC	0.01MF	10%	25V
C327	1-123-356-00	ELECT	10MF	20%	16V
C328	1-161-055-00	CERAMIC	0.022MF	10%	25V
C329	1-161-055-00	CERAMIC	0.022MF	10%	25V
C330	1-161-013-00	CERAMIC	0.01MF	10%	25V
C331	1-161-025-00	CERAMIC	0.1MF	10%	25V
C333	1-161-025-00	CERAMIC	0.1MF	10%	25V
C334	1-161-013-00	CERAMIC	0.01MF	10%	25V
C335	1-161-013-00	CERAMIC	0.01MF	10%	25V
C336	1-161-013-00	CERAMIC	0.01MF	10%	25V
C337	1-102-958-00	CERAMIC	20PF	5%	50V
C338	1-102-958-00	CERAMIC	20PF	5%	50V
C339	1-161-330-00	CERAMIC	0.01MF	30%	25V
C340	1-161-013-00	CERAMIC	0.01MF	10%	25V
C343	1-161-059-00	CERAMIC	0.047MF	10%	25V
C344	1-102-521-00	CERAMIC	43PF	5%	50V
C345	1-102-514-00	CERAMIC	22PF	5%	50V
C346	1-161-013-00	CERAMIC	0.01MF	10%	25V
C347	1-102-947-00	CERAMIC	10PF	5%	50V
C348	1-161-013-00	CERAMIC	0.01MF	10%	25V
C351	1-161-025-00	CERAMIC	0.1MF	10%	25V
C352	1-123-333-00	ELECT	100MF	20%	16V
C353	1-123-318-00	ELECT	33MF	20%	16V
C354	1-161-059-00	CERAMIC	0.047MF	10%	25V
C355	1-161-013-00	CERAMIC	0.01MF	10%	25V
C356	1-123-318-00	ELECT	33MF	20%	16V
C401	1-161-013-00	CERAMIC	0.01MF	10%	25V
C402	1-123-369-00	ELECT	4.7MF	20%	25V
C403	1-130-475-00	MYLAR	0.0022MF	5%	50V
C404	1-123-380-00	ELECT	1MF	20%	50V
C406	1-161-013-00	CERAMIC	0.01MF	10%	25V
C407	1-123-356-00	ELECT	10MF	20%	16V
C408	1-161-013-00	CERAMIC	0.01MF	10%	25V
C409	1-161-013-00	CERAMIC	0.01MF	10%	25V
C410	1-161-013-00	CERAMIC	0.01MF	10%	25V
C411	1-161-013-00	CERAMIC	0.01MF	10%	25V
C412	1-161-013-00	CERAMIC	0.01MF	10%	25V
C413	1-161-013-00	CERAMIC	0.01MF	10%	25V
C414	1-130-475-00	MYLAR	0.0022MF	5%	50V
C415	1-123-369-00	ELECT	4.7MF	20%	25V
C417	1-123-380-00	ELECT	1MF	20%	50V
C419	1-123-332-00	ELECT	47MF	20%	16V
C420	1-161-013-00	CERAMIC	0.01MF	10%	25V
C501	1-161-025-00	CERAMIC	0.1MF	10%	25V
C502	1-161-013-00	CERAMIC	0.01MF	10%	25V
C503	1-161-025-00	CERAMIC	0.1MF	10%	25V
C504	1-161-013-00	CERAMIC	0.01MF	10%	25V
C505	1-161-025-00	CERAMIC	0.1MF	10%	25V
C506	1-102-977-00	CERAMIC	200PF	5%	50V
C507	1-123-356-00	ELECT	10MF	20%	16V
C508	1-161-013-00	CERAMIC	0.01MF	10%	25V
C509	1-161-025-00	CERAMIC	0.1MF	10%	25V
C510	1-161-013-00	CERAMIC	0.01MF	10%	25V
C511	1-161-013-00	CERAMIC	0.01MF	10%	25V
C512	1-161-025-00	CERAMIC	0.1MF	10%	25V
C513	1-161-025-00	CERAMIC	0.1MF	10%	25V
C514	1-102-978-00	CERAMIC	220PF	5%	50V
C515	1-161-013-00	CERAMIC	0.01MF	10%	25V
C516	1-161-025-00	CERAMIC	0.1MF	10%	25V
C517	1-161-025-00	CERAMIC	0.1MF	10%	25V
C518	1-123-380-00	ELECT	1MF	20%	50V
C519	1-161-013-00	CERAMIC	0.01MF	10%	25V
C520	1-123-380-00	ELECT	1MF	20%	50V
C521	1-102-531-00	CERAMIC	150PF	5%	50V
C522	1-161-025-00	CERAMIC	0.1MF	10%	25V
C523	1-123-318-00	ELECT	33MF	20%	16V
C524	1-161-013-00	CERAMIC	0.01MF	10%	25V
C525	1-161-013-00	CERAMIC	0.01MF	10%	25V
C526	1-161-025-00	CERAMIC	0.1MF	10%	25V

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description			Remark
C527	1-123-318-00	ELECT	33MF	20%	16V
C528	1-161-013-00	CERAMIC	0.01MF	10%	25V
C529	1-161-013-00	CERAMIC	0.01MF	10%	25V
C530	1-161-025-00	CERAMIC	0.1MF	10%	25V
C532	1-123-332-00	ELECT	47MF	20%	16V
C533	1-161-013-00	CERAMIC	0.01MF	10%	25V
C534	1-161-013-00	CERAMIC	0.01MF	10%	25V
C535	1-161-013-00	CERAMIC	0.01MF	10%	25V
C536	1-161-013-00	CERAMIC	0.01MF	10%	25V
C537	1-161-013-00	CERAMIC	0.01MF	10%	25V
C538	1-161-013-00	CERAMIC	0.01MF	10%	25V
C539	1-123-318-00	ELECT	33MF	20%	16V
C540	1-161-013-00	CERAMIC	0.01MF	10%	25V
C541	1-161-025-00	CERAMIC	0.1MF	10%	25V
C542	1-161-025-00	CERAMIC	0.1MF	10%	25V
C543	1-161-025-00	CERAMIC	0.1MF	10%	25V
C544	1-102-822-00	CERAMIC	390PF	5%	50V
C545	1-161-025-00	CERAMIC	0.1MF	10%	25V
C701	1-123-356-00	ELECT	10MF	20%	16V
C702	1-123-356-00	ELECT	10MF	20%	16V
C703	1-101-886-00	CERAMIC	62PF	5%	50V
C704	1-101-886-00	CERAMIC	62PF	5%	50V
C705	1-123-356-00	ELECT	10MF	20%	16V
C706	1-123-356-00	ELECT	10MF	20%	16V
C707	1-123-332-00	ELECT	47MF	20%	16V
C708	1-123-332-00	ELECT	47MF	20%	16V
C709	1-123-332-00	ELECT	47MF	20%	16V
C710	1-123-332-00	ELECT	47MF	20%	16V
C711	1-123-356-00	ELECT	10MF	20%	16V
C712	1-123-356-00	ELECT	10MF	20%	16V
C713	1-101-886-00	CERAMIC	62PF	5%	50V
C714	1-101-886-00	CERAMIC	62PF	5%	50V
C715	1-123-356-00	ELECT	10MF	20%	16V
C716	1-123-356-00	ELECT	10MF	20%	16V
C717	1-123-332-00	ELECT	47MF	20%	16V
C718	1-123-332-00	ELECT	47MF	20%	16V
C719	1-123-332-00	ELECT	47MF	20%	16V
C720	1-123-332-00	ELECT	47MF	20%	16V
C721	1-123-356-00	ELECT	10MF	20%	16V
C722	1-123-356-00	ELECT	10MF	20%	16V
C723	1-123-356-00	ELECT	10MF	20%	16V
C724	1-123-356-00	ELECT	10MF	20%	16V
C725	1-123-356-00	ELECT	10MF	20%	16V
C726	1-123-356-00	ELECT	10MF	20%	16V
C727	1-123-356-00	ELECT	10MF	20%	16V
C728	1-123-356-00	ELECT	10MF	20%	16V
C729	1-123-333-00	ELECT	100MF	20%	16V
C730	1-123-333-00	ELECT	100MF	20%	16V
C731	1-161-013-00	CERAMIC	0.01MF	10%	25V
C732	1-161-013-00	CERAMIC	0.01MF	10%	25V
C733	1-123-318-00	ELECT	33MF	20%	16V
C734	1-123-318-00	ELECT	33MF	20%	16V
C735	1-123-333-00	ELECT	100MF	20%	16V

Ref.No	Part NO.	Description			Remark
C736	1-123-333-00	ELECT	100MF	20%	16V
C737	1-123-579-00	ELECT	470MF	20%	16V
C738	1-123-579-00	ELECT	470MF	20%	16V

CONNECTOR

CN301♠:	1-560-462-00	PIN, CONNECTOR 6P
CN302♠:	1-560-893-00	PIN, CONNECTOR 5P
CN304♠:	1-560-470-00	PIN, CONNECTOR 8P
CN305♠:	1-560-470-00	PIN, CONNECTOR 8P
CN306♠:	1-560-469-00	PIN, CONNECTOR 6P
CN307♠:	1-560-466-00	PIN, CONNECTOR 3P
CN501♠:	1-564-022-00	PIN, CONNECTOR 12P
CN502♠:	1-564-016-41	PIN, CONNECTOR 6P
CN503♠:	1-560-893-00	PIN, CONNECTOR 5P
CN701♠:	1-560-469-00	PIN, CONNECTOR 6P
CN702♠:	1-560-468-00	PIN, CONNECTOR 5P
CN703♠:	1-560-467-00	PIN, CONNECTOR 4P
CN704♠:	1-560-468-00	PIN, CONNECTOR 5P
CN705♠:	1-560-469-00	PIN, CONNECTOR 6P

DIODE

D301	=>8-719-100-68	DIODE RD13E-B2
D302	=>8-719-100-68	DIODE RD13E-B2
D303	8-719-911-19	DIODE 1SS119
D304	=>8-719-100-68	DIODE RD13E-B2
D305	=>8-719-100-68	DIODE RD13E-B2
D401	8-719-911-19	DIODE 1SS119
D404	8-719-911-19	DIODE 1SS119
D405	8-719-000-04	DIODE MC911
D406	8-719-911-19	DIODE 1SS119
D501	8-719-911-19	DIODE 1SS119
D502	8-719-911-19	DIODE 1SS119
D503	8-719-911-19	DIODE 1SS119
D504	8-719-911-19	DIODE 1SS119
D505	8-719-911-19	DIODE 1SS119
D506	8-719-911-19	DIODE 1SS119
D507	=>8-719-100-68	DIODE RD13E-B2
D508	=>8-719-100-68	DIODE RD13E-B2
D701	8-719-113-07	DIODE RD13E-B
D709	8-719-113-07	DIODE RD13E-B

IC

IC301	8-758-620-00	IC CX862
IC302	8-759-601-34	IC CX134A
IC401	8-759-145-58	IC UPC4558C
IC501	8-752-006-10	IC CX20061
IC701	8-759-700-62	IC NJM4562D
IC702	8-759-700-62	IC NJM4562D

COIL

L301	1-408-429-00	MICRO INDUCTOR 470UH
L302	1-408-878-00	MICRO INDUCTOR 0.33UH
L303	1-408-878-00	MICRO INDUCTOR 0.33UH

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
L306	1-408-423-00	MICRO INDUCTOR 150UH	
L307	1-407-502-00	MICRO INDUCTOR 6.8MMH	
L308	1-407-502-00	MICRO INDUCTOR 6.8MMH	
L309	1-408-414-00	MICRO INDUCTOR 27UH	
L310	1-408-414-00	MICRO INDUCTOR 27UH	
L311	1-408-416-00	MICRO INDUCTOR 39UH	
L312	1-408-422-00	MICRO INDUCTOR 120UH	
L313	1-407-717-00	MICRO INDUCTOR 1MMH	
L314	1-408-421-00	MICRO INDUCTOR 100UH	
L315	1-408-408-00	MICRO INDUCTOR 8.2UH	
L316	1-408-409-00	MICRO INDUCTOR 10UH	
L317	1-408-409-00	MICRO INDUCTOR 10UH	
L318	1-408-421-00	MICRO INDUCTOR 100UH	
L401	1-408-413-00	MICRO INDUCTOR 22UH	
L501	1-408-405-00	MICRO INDUCTOR 4.7UH	
L502	1-408-421-00	MICRO INDUCTOR 100UH	
L503	1-408-405-00	MICRO INDUCTOR 4.7UH	
L504	1-408-421-00	MICRO INDUCTOR 100UH	
L505	1-408-421-00	MICRO INDUCTOR 100UH	

TRANSISTOR

Ref.No	Part NO.	Description	Remark
Q301	=>8-729-245-83	TRANSISTOR 2SC2458	
Q302	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q303	8-729-100-13	TRANSISTOR 2SC2001	
Q304	=>8-729-245-83	TRANSISTOR 2SC2458	
Q305	=>8-729-245-83	TRANSISTOR 2SC2458	
Q306	=>8-729-245-83	TRANSISTOR 2SC2458	
Q307	=>8-729-245-83	TRANSISTOR 2SC2458	
Q308	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q309	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q310	=>8-729-245-83	TRANSISTOR 2SC2458	
Q311	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q312	=>8-729-245-83	TRANSISTOR 2SC2458	
Q313	=>8-729-245-83	TRANSISTOR 2SC2458	
Q314	=>8-729-245-83	TRANSISTOR 2SC2458	
Q401	=>8-729-173-37	TRANSISTOR 2SA733-P	
Q402	⚠.8-729-281-52	TRANSISTOR 2SC1815-Y	
Q403	=>8-729-245-83	TRANSISTOR 2SC2458	
Q404	=>8-729-245-83	TRANSISTOR 2SC2458	
Q405	=>8-729-173-37	TRANSISTOR 2SA733-P	
Q406	8-729-900-89	TRANSISTOR DTC144ES	
Q501	=>8-729-245-83	TRANSISTOR 2SC2458	
Q502	8-769-163-00	TRANSISTOR 2SK152-3	
Q503	=>8-729-245-83	TRANSISTOR 2SC2458	
Q504	8-729-384-48	TRANSISTOR 2SA844	
Q505	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q506	=>8-729-245-83	TRANSISTOR 2SC2458	
Q507	8-769-163-00	TRANSISTOR 2SK152-3	
Q508	8-729-384-48	TRANSISTOR 2SA844	
Q509	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q510	=>8-729-245-83	TRANSISTOR 2SC2458	
Q511	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q512	8-729-384-48	TRANSISTOR 2SA844	
Q513	8-729-113-33	TRANSISTOR 2SB733-4	
Q514	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q515	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q518	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q519	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q520	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q701	=>8-729-245-83	TRANSISTOR 2SC2458	
Q702	=>8-729-245-83	TRANSISTOR 2SC2458	
Q703	=>8-729-245-83	TRANSISTOR 2SC2458	
Q704	=>8-729-245-83	TRANSISTOR 2SC2458	
Q705	8-729-606-33	TRANSISTOR 2SC2603-F	
Q706	8-729-606-33	TRANSISTOR 2SC2603-F	
Q707	8-729-606-33	TRANSISTOR 2SC2603-F	
Q708	8-729-606-33	TRANSISTOR 2SC2603-F	
Q709	⚠.8-729-178-54	TRANSISTOR 2SC2785	
Q710	⚠.8-729-117-54	TRANSISTOR 2SA1175	
Q711	=>8-729-204-83	TRANSISTOR 2SA1048-GR	

RESISTOR

Ref.No	Part NO.	Description				Remark
R301	1-247-825-00	CARBON	560	5%	1/6W	
R303	1-247-825-00	CARBON	560	5%	1/6W	
R305	1-247-863-00	CARBON	22K	5%	1/6W	
R306	1-247-855-00	CARBON	10K	5%	1/6W	
R307	1-247-852-00	CARBON	7.5K	5%	1/6W	
R308	1-247-855-00	CARBON	10K	5%	1/6W	
R309	1-247-844-00	CARBON	3.6K	5%	1/6W	
R310	1-247-867-00	CARBON	33K	5%	1/6W	
R312	1-247-862-00	CARBON	20K	5%	1/6W	
R313	1-247-866-00	CARBON	30K	5%	1/6W	
R315	1-247-827-00	CARBON	680	5%	1/6W	
R316	1-247-827-00	CARBON	680	5%	1/6W	
R318	1-247-829-00	CARBON	820	5%	1/6W	
R319	1-247-844-00	CARBON	3.6K	5%	1/6W	
R320	1-247-844-00	CARBON	3.6K	5%	1/6W	
R321	1-247-831-00	CARBON	1K	5%	1/6W	
R322	1-247-867-00	CARBON	33K	5%	1/6W	
R323	1-247-871-00	CARBON	47K	5%	1/6W	
R324	1-247-847-00	CARBON	4.7K	5%	1/6W	
R325	1-247-847-00	CARBON	4.7K	5%	1/6W	
R326	1-247-855-00	CARBON	10K	5%	1/6W	
R327	1-247-847-00	CARBON	4.7K	5%	1/6W	
R328	1-247-855-00	CARBON	10K	5%	1/6W	
R329	1-247-824-00	CARBON	510	5%	1/6W	
R330	1-247-824-00	CARBON	510	5%	1/6W	
R331	1-247-779-00	CARBON	6.8	5%	1/6W	
R332	1-247-822-00	CARBON	430	5%	1/6W	
R333	1-247-815-00	CARBON	220	5%	1/6W	
R334	⚠.1-212-855-00	FUSIBLE	8.2	5%	1/4W	F
R335	1-247-839-00	CARBON	2.2K	5%	1/6W	
R336	1-247-839-00	CARBON	2.2K	5%	1/6W	
R337	1-247-831-00	CARBON	1K	5%	1/6W	
R338	1-247-831-00	CARBON	1K	5%	1/6W	
R339	1-247-839-00	CARBON	2.2K	5%	1/6W	

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description				Remark
R340	1-247-839-00	CARBON	2.2K	5%	1/6W	
R341	1-247-833-00	CARBON	1.2K	5%	1/6W	
R342 ⚠	1-212-855-00	FUSIBLE	8.2	5%	1/4W	F
R343	1-247-847-00	CARBON	4.7K	5%	1/6W	
R344	1-247-849-00	CARBON	5.6K	5%	1/6W	
R345	1-247-849-00	CARBON	5.6K	5%	1/6W	
R346	1-247-839-00	CARBON	2.2K	5%	1/6W	
R347	1-247-844-00	CARBON	3.6K	5%	1/6W	
R348	1-247-847-00	CARBON	4.7K	5%	1/6W	
R349	1-247-855-00	CARBON	10K	5%	1/6W	
R350	1-247-847-00	CARBON	4.7K	5%	1/6W	
R351	1-247-851-00	CARBON	6.8K	5%	1/6W	
R352	1-247-831-00	CARBON	1K	5%	1/6W	
R353	1-247-831-00	CARBON	1K	5%	1/6W	
R354	1-247-807-00	CARBON	100	5%	1/6W	
R355	1-247-867-00	CARBON	33K	5%	1/6W	
R356	1-247-871-00	CARBON	47K	5%	1/6W	
R357	1-247-803-00	CARBON	68	5%	1/6W	
R358	1-247-803-00	CARBON	68	5%	1/6W	
R359	1-247-811-00	CARBON	150	5%	1/6W	
R360	1-247-811-00	CARBON	150	5%	1/6W	
R361	1-247-825-00	CARBON	560	5%	1/6W	
R362	1-247-843-00	CARBON	3.3K	5%	1/6W	
R363	1-247-891-00	CARBON	330K	5%	1/6W	
R364	1-247-807-00	CARBON	100	5%	1/6W	
R365	1-247-807-00	CARBON	100	5%	1/6W	
R366	1-247-855-00	CARBON	10K	5%	1/6W	
R367	1-247-855-00	CARBON	10K	5%	1/6W	
R368	1-247-831-00	CARBON	1K	5%	1/6W	
R369	1-247-804-00	CARBON	75	5%	1/6W	
R376	1-247-824-00	CARBON	510	5%	1/6W	
R377	1-247-824-00	CARBON	510	5%	1/6W	
R378	1-247-823-00	CARBON	470	5%	1/6W	
R379	1-247-824-00	CARBON	510	5%	1/6W	
R380	1-247-821-00	CARBON	390	5%	1/6W	
R381	1-247-831-00	CARBON	1K	5%	1/6W	
R382	1-247-863-00	CARBON	22K	5%	1/6W	
R383	1-247-868-00	CARBON	36K	5%	1/6W	
R384	1-247-831-00	CARBON	1K	5%	1/6W	
R385	1-247-825-00	CARBON	560	5%	1/6W	
R386	1-247-825-00	CARBON	560	5%	1/6W	
R387	1-247-871-00	CARBON	47K	5%	1/6W	
R388	1-247-879-00	CARBON	100K	5%	1/6W	
R390	1-247-831-00	CARBON	1K	5%	1/6W	
R401	1-247-807-00	CARBON	100	5%	1/6W	
R402	1-247-879-00	CARBON	100K	5%	1/6W	
R403	1-247-855-00	CARBON	10K	5%	1/6W	
R409	1-247-849-00	CARBON	5.6K	5%	1/6W	
R410	1-247-903-00	CARBON	1M	5%	1/6W	
R411	1-247-891-00	CARBON	330K	5%	1/6W	
R412	1-247-849-00	CARBON	5.6K	5%	1/6W	
R414	1-247-891-00	CARBON	330K	5%	1/6W	
R416	1-247-855-00	CARBON	10K	5%	1/6W	
R417	1-247-855-00	CARBON	10K	5%	1/6W	
R418	1-247-839-00	CARBON	2.2K	5%	1/6W	
R419	1-247-831-00	CARBON	1K	5%	1/6W	
R420	1-247-829-00	CARBON	820	5%	1/6W	
R421	1-247-847-00	CARBON	4.7K	5%	1/6W	
R422	1-247-807-00	CARBON	100	5%	1/6W	
R423	1-247-855-00	CARBON	10K	5%	1/6W	
R424	1-247-841-00	CARBON	2.7K	5%	1/6W	
R425	1-247-827-00	CARBON	680	5%	1/6W	
R426	1-247-809-00	CARBON	120	5%	1/6W	
R427	1-247-811-00	CARBON	150	5%	1/6W	
R428	1-247-807-00	CARBON	100	5%	1/6W	
R429	1-247-879-00	CARBON	100K	5%	1/6W	
R430	1-247-855-00	CARBON	10K	5%	1/6W	
R433	1-247-847-00	CARBON	4.7K	5%	1/6W	
R434	1-247-841-00	CARBON	2.7K	5%	1/6W	
R435	1-247-831-00	CARBON	1K	5%	1/6W	
R436	1-247-825-00	CARBON	560	5%	1/6W	
R437	1-247-819-00	CARBON	330	5%	1/6W	
R438	1-247-863-00	CARBON	22K	5%	1/6W	
R439	1-247-839-00	CARBON	2.2K	5%	1/6W	
R442	1-247-839-00	CARBON	2.2K	5%	1/6W	
R443	1-247-861-00	CARBON	18K	5%	1/6W	
R444	1-247-863-00	CARBON	22K	5%	1/6W	
R445	1-247-839-00	CARBON	2.2K	5%	1/6W	
R446	1-247-871-00	CARBON	47K	5%	1/6W	
R447	1-247-839-00	CARBON	2.2K	5%	1/6W	
R448	1-247-855-00	CARBON	10K	5%	1/6W	
R449	1-247-863-00	CARBON	22K	5%	1/6W	
R501	1-247-849-00	CARBON	5.6K	5%	1/6W	
R502	1-247-831-00	CARBON	1K	5%	1/6W	
R503	1-247-855-00	CARBON	10K	5%	1/6W	
R504	1-247-855-00	CARBON	10K	5%	1/6W	
R505	1-247-821-00	CARBON	390	5%	1/6W	
R506	1-247-818-00	CARBON	300	5%	1/6W	
R507	1-247-810-00	CARBON	130	5%	1/6W	
R509 ⚠	1-212-857-00	FUSIBLE	10	5%	1/4W	F
R510	1-247-831-00	CARBON	1K	5%	1/6W	
R511	1-247-807-00	CARBON	100	5%	1/6W	
R512	1-247-807-00	CARBON	100	5%	1/6W	
R513	1-247-849-00	CARBON	5.6K	5%	1/6W	
R514	1-247-818-00	CARBON	300	5%	1/6W	
R515	1-247-799-00	CARBON	47	5%	1/6W	
R516	1-247-827-00	CARBON	680	5%	1/6W	
R517	1-247-821-00	CARBON	390	5%	1/6W	
R518	1-247-807-00	CARBON	100	5%	1/6W	
R519	1-247-855-00	CARBON	10K	5%	1/6W	
R520	1-247-855-00	CARBON	10K	5%	1/6W	
R522	1-247-831-00	CARBON	1K	5%	1/6W	
R523	1-247-807-00	CARBON	100	5%	1/6W	
R525	1-247-869-00	CARBON	39K	5%	1/6W	
R526	1-247-831-00	CARBON	1K	5%	1/6W	
R527	1-247-853-00	CARBON	8.2K	5%	1/6W	

NOTE:

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When indicating parts by reference number, please include the board name.

RP-18

Ref.No	Part NO.	Description				Remark
R528	1-247-855-00	CARBON	10K	5%	1/6W	
R529	1-247-820-00	CARBON	360	5%	1/6W	
R530	1-247-819-00	CARBON	330	5%	1/6W	
R531	1-247-799-00	CARBON	47	5%	1/6W	
R532 ⚠	1-211-608-00	CARBON	56	5%	1/2W	F
R533	1-247-823-00	CARBON	470	5%	1/6W	
R534	1-247-826-00	CARBON	620	5%	1/6W	
R535	1-247-079-00	CARBON	4.7	5%	1/4W	
R536	1-247-807-00	CARBON	100	5%	1/6W	
R537	1-247-857-00	CARBON	12K	5%	1/6W	
R538	1-247-827-00	CARBON	680	5%	1/6W	
R539	1-247-807-00	CARBON	100	5%	1/6W	
R540	1-247-807-00	CARBON	100	5%	1/6W	
R541	1-247-831-00	CARBON	1K	5%	1/6W	
R542	1-247-849-00	CARBON	5.6K	5%	1/6W	
R543	1-247-849-00	CARBON	5.6K	5%	1/6W	
R544	1-247-871-00	CARBON	47K	5%	1/6W	
R545	1-247-850-00	CARBON	6.2K	5%	1/6W	
R546	1-247-842-00	CARBON	3K	5%	1/6W	
R547	1-247-849-00	CARBON	5.6K	5%	1/6W	
R548	1-247-871-00	CARBON	47K	5%	1/6W	
R549	1-247-850-00	CARBON	6.2K	5%	1/6W	
R550	1-247-842-00	CARBON	3K	5%	1/6W	
R553	1-247-903-00	CARBON	1M	5%	1/6W	
R554	1-247-903-00	CARBON	1M	5%	1/6W	
R555	1-247-831-00	CARBON	1K	5%	1/6W	
R556	1-247-807-00	CARBON	100	5%	1/6W	
R557	1-247-855-00	CARBON	10K	5%	1/6W	
R558	1-247-855-00	CARBON	10K	5%	1/6W	
R559	1-247-811-00	CARBON	150	5%	1/6W	
R560	1-247-829-00	CARBON	820	5%	1/6W	
R561	1-247-803-00	CARBON	68	5%	1/6W	
R562	1-247-803-00	CARBON	68	5%	1/6W	
R563	1-247-855-00	CARBON	10K	5%	1/6W	
R564	1-247-847-00	CARBON	4.7K	5%	1/6W	
R565	1-247-861-00	CARBON	18K	5%	1/6W	
R566	1-247-815-00	CARBON	220	5%	1/6W	
R567	1-247-831-00	CARBON	1K	5%	1/6W	
R568	1-247-811-00	CARBON	150	5%	1/6W	
R569	1-247-813-00	CARBON	180	5%	1/6W	
R570	1-247-807-00	CARBON	100	5%	1/6W	
R571	1-247-855-00	CARBON	10K	5%	1/6W	
R572	1-247-855-00	CARBON	10K	5%	1/6W	
R573	1-247-811-00	CARBON	150	5%	1/6W	
R574	1-247-829-00	CARBON	820	5%	1/6W	
R575	1-247-839-00	CARBON	2.2K	5%	1/6W	
R576	1-247-831-00	CARBON	1K	5%	1/6W	
R701	1-247-887-00	CARBON	220K	5%	1/6W	
R702	1-247-887-00	CARBON	220K	5%	1/6W	
R703	1-247-873-00	CARBON	56K	5%	1/6W	
R704	1-247-873-00	CARBON	56K	5%	1/6W	
R705	1-247-861-00	CARBON	18K	5%	1/6W	
R706	1-247-861-00	CARBON	18K	5%	1/6W	

Ref.No	Part NO.	Description				Remark
R707	1-247-847-00	CARBON	4.7K	5%	1/6W	
R708	1-247-847-00	CARBON	4.7K	5%	1/6W	
R709	1-247-845-00	CARBON	3.9K	5%	1/6W	
R710	1-247-845-00	CARBON	3.9K	5%	1/6W	
R711	1-247-879-00	CARBON	100K	5%	1/6W	
R712	1-247-879-00	CARBON	100K	5%	1/6W	
R713	1-247-831-00	CARBON	1K	5%	1/6W	
R714	1-247-831-00	CARBON	1K	5%	1/6W	
R715	1-247-831-00	CARBON	1K	5%	1/6W	
R716	1-247-831-00	CARBON	1K	5%	1/6W	
R717	1-247-887-00	CARBON	220K	5%	1/6W	
R718	1-247-887-00	CARBON	220K	5%	1/6W	
R719	1-247-873-00	CARBON	56K	5%	1/6W	
R720	1-247-873-00	CARBON	56K	5%	1/6W	
R721	1-247-861-00	CARBON	18K	5%	1/6W	
R722	1-247-861-00	CARBON	18K	5%	1/6W	
R723	1-247-847-00	CARBON	4.7K	5%	1/6W	
R724	1-247-847-00	CARBON	4.7K	5%	1/6W	
R725	1-247-845-00	CARBON	3.9K	5%	1/6W	
R726	1-247-845-00	CARBON	3.9K	5%	1/6W	
R727	1-247-879-00	CARBON	100K	5%	1/6W	
R728	1-247-879-00	CARBON	100K	5%	1/6W	
R729	1-247-831-00	CARBON	1K	5%	1/6W	
R730	1-247-831-00	CARBON	1K	5%	1/6W	
R731	1-247-831-00	CARBON	1K	5%	1/6W	
R732	1-247-831-00	CARBON	1K	5%	1/6W	
R733	1-247-879-00	CARBON	100K	5%	1/6W	
R734	1-247-879-00	CARBON	100K	5%	1/6W	
R735	1-247-855-00	CARBON	10K	5%	1/6W	
R736	1-247-855-00	CARBON	10K	5%	1/6W	
R739	1-247-839-00	CARBON	2.2K	5%	1/6W	
R740	1-247-839-00	CARBON	2.2K	5%	1/6W	
R741	1-247-871-00	CARBON	47K	5%	1/6W	
R742	1-247-871-00	CARBON	47K	5%	1/6W	
R743	1-247-879-00	CARBON	100K	5%	1/6W	
R744	1-247-879-00	CARBON	100K	5%	1/6W	
R745	1-247-855-00	CARBON	10K	5%	1/6W	
R746	1-247-855-00	CARBON	10K	5%	1/6W	
R749	1-247-839-00	CARBON	2.2K	5%	1/6W	
R750	1-247-839-00	CARBON	2.2K	5%	1/6W	
R751	1-247-871-00	CARBON	47K	5%	1/6W	
R752	1-247-871-00	CARBON	47K	5%	1/6W	
R753	1-247-831-00	CARBON	1K	5%	1/6W	
R754	1-247-831-00	CARBON	1K	5%	1/6W	
R755	1-247-851-00	CARBON	6.8K	5%	1/6W	
R756	1-247-863-00	CARBON	22K	5%	1/6W	
R757	1-247-807-00	CARBON	100	5%	1/6W	
R758	1-247-831-00	CARBON	1K	5%	1/6W	
R759	1-247-831-00	CARBON	1K	5%	1/6W	
R760	1-247-831-00	CARBON	1K	5%	1/6W	
R761	1-247-831-00	CARBON	1K	5%	1/6W	
R762	1-247-871-00	CARBON	47K	5%	1/6W	
R763	1-247-847-00	CARBON	4.7K	5%	1/6W	

NOTE:

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Ref.No	Part NO.	Description				Remark
R764	1-247-847-00	CARBON	4.7K	5%	1/6W	
R765	1-247-831-00	CARBON	1K	5%	1/6W	
R766	1-247-831-00	CARBON	1K	5%	1/6W	
R767	1-247-807-00	CARBON	100	5%	1/6W	
R768	1-247-871-00	CARBON	47K	5%	1/6W	
R769	1-247-887-00	CARBON	220K	5%	1/6W	
R771	1-247-871-00	CARBON	47K	5%	1/6W	
R772	1-247-887-00	CARBON	220K	5%	1/6W	
R774	1-247-871-00	CARBON	47K	5%	1/6W	
R775	1-247-887-00	CARBON	220K	5%	1/6W	
R777	1-247-871-00	CARBON	47K	5%	1/6W	
R778	1-247-887-00	CARBON	220K	5%	1/6W	
R780	1-247-855-00	CARBON	10K	5%	1/6W	
R781	1-247-855-00	CARBON	10K	5%	1/6W	

VARIABLE RESISTOR

RV301	1-226-847-00	RES, ADJ, CARBON 1K
RV302	1-226-848-00	RES, ADJ, CARBON 2.2K
RV303	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV304	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV305	1-226-848-00	RES, ADJ, CARBON 2.2K
RV401	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K
RV501	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV502	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV503	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV701	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV702	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV703	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV704	1-228-996-00	RES, ADJ, METAL GLAZE 47K

SWITCH

S401	1-570-033-11	SWITCH, ROTARY
S701	1-554-167-00	SWITCH, SLIDE
S702	1-553-989-00	SWITCH, SLIDE
S703	1-553-989-00	SWITCH, SLIDE

TRANSFORMER

T501	1-427-546-11	TRANSFORMER, I/O
T502	1-427-546-11	TRANSFORMER, I/O

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♠:A-6711-559-A RV-7P BOARD, COMPLETE
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1-533-162-00	HOLDER, FUSE
1-536-723-00	TERMINAL BOARD, CONTROL PANEL

FILTER

BPF001	1-235-098-00	FILTER, BAND PASS

CAPACITOR

Ref.No	Part NO.	Description			Remark
C001	1-123-324-00	ELECT	1000MF	20%	16V
C003	1-123-356-00	ELECT	10MF	20%	16V
C005	1-101-005-00	CERAMIC	0.022MF		50V
C006	1-123-318-00	ELECT	33MF	20%	16V
C007	1-123-318-00	ELECT	33MF	20%	16V
C008	1-101-005-00	CERAMIC	0.022MF		50V
C009	1-101-005-00	CERAMIC	0.022MF		50V
C010	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C011	1-101-888-00	CERAMIC	68PF	5%	50V
C012	1-123-381-00	ELECT	2.2MF	20%	50V
C013	1-102-962-00	CERAMIC	30PF	5%	50V
C014	1-123-330-00	ELECT	22MF	20%	16V
C015	1-101-004-00	CERAMIC	0.01MF		50V
C016	1-123-330-00	ELECT	22MF	20%	16V
C017	1-101-001-00	CERAMIC	0.001MF		50V
C018	1-101-001-00	CERAMIC	0.001MF		50V
C019	1-123-381-00	ELECT	2.2MF	20%	50V
C020	1-123-230-00	ELECT	2.2MF	20%	50V
C021	1-101-006-00	CERAMIC	0.047MF		50V
C022	1-123-369-00	ELECT	4.7MF	20%	25V
C023	1-123-356-00	ELECT	10MF	20%	16V
C024	1-102-965-00	CERAMIC	39PF	5%	50V
C025	1-102-948-00	CERAMIC	11PF	5%	50V
C026	1-102-948-00	CERAMIC	11PF	5%	50V
C027	1-123-318-00	ELECT	33MF	20%	16V
C028	1-123-369-00	ELECT	4.7MF	20%	25V
C029	1-123-318-00	ELECT	33MF	20%	16V
C030	1-123-356-00	ELECT	10MF	20%	16V
C031	1-123-356-00	ELECT	10MF	20%	16V
C032	1-123-369-00	ELECT	4.7MF	20%	25V
C033	1-102-114-00	CERAMIC	470PF	10%	50V
C034	1-101-005-00	CERAMIC	0.022MF		50V
C035	1-102-977-00	CERAMIC	200PF	5%	50V
C036	1-123-318-00	ELECT	33MF	20%	16V
C037	1-102-114-00	CERAMIC	470PF	10%	50V
C038	1-101-059-00	CERAMIC	510PF	5%	50V
C039	1-108-595-00	MYLAR	0.047MF	5%	50V
C040	1-161-063-00	CERAMIC	0.1MF	20%	25V
C041	1-102-973-00	CERAMIC	100PF	5%	50V
C042	1-102-977-00	CERAMIC	200PF	5%	50V
C043	1-123-356-00	ELECT	10MF	20%	16V
C044	1-161-063-00	CERAMIC	0.1MF	20%	25V
C045	1-102-947-00	CERAMIC	10PF	5%	50V
C046	1-123-306-00	ELECT	47MF	20%	10V
C047	1-123-369-00	ELECT	4.7MF	20%	25V
C048	1-101-880-00	CERAMIC	47PF	5%	50V
C049	1-123-318-00	ELECT	33MF	20%	16V
C050	1-123-356-00	ELECT	10MF	20%	16V
C051	1-123-318-00	ELECT	33MF	20%	16V
C052	1-123-318-00	ELECT	33MF	20%	16V
C053	1-123-330-00	ELECT	22MF	20%	16V

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description			Remark
C054	1-108-557-00	MYLAR	0.0012MF	5%	50V
C055	1-102-117-00	CERAMIC	820PF	10%	50V
C056	1-101-006-00	CERAMIC	0.047MF		50V
C057	1-102-531-00	CERAMIC	150PF	5%	50V
C058	1-101-005-00	CERAMIC	0.022MF		50V
C059	1-123-318-00	ELECT	33MF	20%	16V
C060	1-123-318-00	ELECT	33MF	20%	16V
C061	1-106-172-00	MYLAR	0.001MF	5%	50V
C062	1-106-172-00	MYLAR	0.001MF	5%	50V
C063	1-102-531-00	CERAMIC	150PF	5%	50V
C064	1-123-380-00	ELECT	1MF	20%	50V
C065	1-101-004-00	CERAMIC	0.01MF		50V
C066	1-101-004-00	CERAMIC	0.01MF		50V
C067	1-101-003-00	CERAMIC	0.0047MF		50V
C068	1-101-006-00	CERAMIC	0.047MF		50V
C069	1-101-001-00	CERAMIC	0.001MF		50V
C070	1-123-356-00	ELECT	10MF	20%	16V
C071	1-101-005-00	CERAMIC	0.022MF		50V
C072	1-123-382-00	ELECT	3.3MF	20%	50V
C073	1-123-380-00	ELECT	1MF	20%	50V
C074	1-123-356-00	ELECT	10MF	20%	25V
C075	1-123-356-00	ELECT	10MF	20%	25V
C076	1-101-004-00	CERAMIC	0.01MF		50V
C077	1-102-110-00	CERAMIC	220PF	10%	50V
C078	1-101-004-00	CERAMIC	0.01MF		50V
C079	1-102-525-00	CERAMIC	68PF	5%	50V
C080	1-102-525-00	CERAMIC	68PF	5%	50V
C081	1-102-953-00	CERAMIC	18PF	5%	50V
C082	1-101-004-00	CERAMIC	0.01MF		50V
C083	1-101-004-00	CERAMIC	0.01MF		50V
C084	1-101-005-00	CERAMIC	0.022MF		50V
C085	1-102-113-00	CERAMIC	390PF	10%	50V
C086	1-101-005-00	CERAMIC	0.022MF		50V
C087	1-123-318-00	ELECT	33MF	20%	16V
C088	1-123-318-00	ELECT	33MF	20%	16V
C089	1-101-005-00	CERAMIC	0.022MF		50V
C090	1-101-004-00	CERAMIC	0.01MF		50V
C091	1-101-004-00	CERAMIC	0.01MF		50V
C092	1-101-004-00	CERAMIC	0.01MF		50V
C093	1-101-005-00	CERAMIC	0.022MF		50V
C094	1-102-511-00	CERAMIC	13PF	5%	50V
C095	1-101-006-00	CERAMIC	0.047MF		50V
C096	1-101-006-00	CERAMIC	0.047MF		50V
C097	1-123-333-00	ELECT	100MF	20%	16V
C098	1-101-006-00	CERAMIC	0.047MF		50V
C099	1-101-001-00	CERAMIC	0.001MF		50V
C100	1-123-318-00	ELECT	33MF	20%	16V
C101	1-101-006-00	CERAMIC	0.047MF		50V
C102	1-101-006-00	CERAMIC	0.047MF		50V
C103	1-101-001-00	CERAMIC	0.001MF		50V
C104	1-101-005-00	CERAMIC	0.022MF		50V
C105	1-101-001-00	CERAMIC	0.001MF		50V
C106	1-102-512-00	CERAMIC	16PF	5%	50V
C107	1-101-005-00	CERAMIC	0.022MF		50V
C108	1-123-330-00	ELECT	22MF	20%	16V
C109	1-131-341-00	ELECT(SOLID)	0.1MF	10%	25V
C110	1-101-006-00	CERAMIC	0.047MF		50V
C111	1-101-004-00	CERAMIC	0.01MF		50V
C112	1-101-004-00	CERAMIC	0.01MF		50V
C113	1-101-004-00	CERAMIC	0.01MF		50V
C114	1-101-004-00	CERAMIC	0.01MF		50V
C115	1-101-004-00	CERAMIC	0.01MF		50V
C116	1-101-005-00	CERAMIC	0.022MF		50V
C117	1-123-382-00	ELECT	3.3MF	20%	50V
C118	1-102-520-00	CERAMIC	39PF	5%	50V
C120	1-161-063-00	CERAMIC	0.1MF	20%	25V
C122	1-101-006-00	CERAMIC	0.047MF		50V
C123	1-101-006-00	CERAMIC	0.047MF		50V
C124	1-101-004-00	CERAMIC	0.01MF		50V
C125	1-101-004-00	CERAMIC	0.01MF		50V
C130	1-101-004-00	CERAMIC	0.01MF		50V
C131	1-123-318-00	ELECT	33MF	20%	16V
C132	1-102-948-00	CERAMIC	11PF	5%	50V
C134	1-102-119-00	CERAMIC	0.0015MF	10%	50V
C135	1-123-369-00	ELECT	4.7MF	20%	25V
C136	1-102-112-00	CERAMIC	330PF	10%	50V
C137	1-102-112-00	CERAMIC	330PF	10%	50V
C138	1-101-006-00	CERAMIC	0.047MF		50V
C139	1-102-112-00	CERAMIC	330PF	10%	50V
C140	1-101-004-00	CERAMIC	0.01MF		50V
C141	1-101-005-00	CERAMIC	0.022MF		50V
C142	1-101-005-00	CERAMIC	0.022MF		50V
C143	1-123-318-00	ELECT	33MF	20%	16V
C144	1-123-318-00	ELECT	33MF	20%	16V
C145	1-123-356-00	ELECT	10MF	20%	16V
C146	1-101-006-00	CERAMIC	0.047MF		50V
C147	1-102-511-00	CERAMIC	13PF	5%	50V
C148	1-102-522-00	CERAMIC	51PF	5%	50V
C149	1-102-522-00	CERAMIC	51PF	5%	50V
C150	1-102-511-00	CERAMIC	13PF	5%	50V
C151	1-101-005-00	CERAMIC	0.022MF		50V
C152	1-123-369-00	ELECT	4.7MF	20%	25V
C153	1-101-005-00	CERAMIC	0.022MF		50V
C154	1-123-318-00	ELECT	33MF	20%	16V
C155	1-102-529-00	CERAMIC	100PF	5%	50V
C156	1-123-369-00	ELECT	4.7MF	20%	25V
C157	1-101-005-00	CERAMIC	0.022MF		50V
C158	1-101-005-00	CERAMIC	0.022MF		50V
C159	1-123-318-00	ELECT	33MF	20%	16V
C160	1-101-005-00	CERAMIC	0.022MF		50V
C161	1-123-318-00	ELECT	33MF	20%	16V
C162	1-102-960-00	CERAMIC	24PF	5%	50V
C163	1-101-004-00	CERAMIC	0.01MF		50V
C164	1-123-318-00	ELECT	33MF	20%	16V
C165	1-101-005-00	CERAMIC	0.022MF		50V
C166	1-101-006-00	CERAMIC	0.047MF		50V

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description			Remark
C167	1-101-884-00	CERAMIC	56PF	5%	50V
C168	1-102-937-00	CERAMIC	4PF	0.25PF	50V
C169	1-101-004-00	CERAMIC	0.01MF		50V
C170	1-101-004-00	CERAMIC	0.01MF		50V
C171	1-123-380-00	ELECT	1MF	20%	50V
C172	1-123-369-00	ELECT	4.7MF	20%	25V
C173	1-123-369-00	ELECT	4.7MF	20%	25V
C174	1-101-004-00	CERAMIC	0.01MF		50V
C178	1-123-369-00	ELECT	4.7MF	20%	25V
C179	1-101-006-00	CERAMIC	0.047MF		50V
C183	1-161-063-00	CERAMIC	0.1MF	20%	25V
C185	1-161-025-00	CERAMIC	0.1MF	10%	25V
C186	1-123-356-00	ELECT	10MF	20%	16V
C187	1-102-821-00	CERAMIC	360PF	5%	50V
C189	1-123-311-00	ELECT	1000MF	20%	10V
C190	1-123-332-00	ELECT	47MF	20%	16V
C195	1-101-004-00	CERAMIC	0.01MF		50V

FILTER

Ref.No	Part NO.	Description
CF001	1-527-874-00	FILTER, CERAMIC
CF002	1-527-875-00	FILTER, CERAMIC
CF003	1-527-849-00	FILTER, CERAMIC

CONNECTOR

Ref.No	Part NO.	Description
CN001	1-560-470-00	PIN, CONNECTOR 8P
CN002♠:	1-560-470-00	PIN, CONNECTOR 8P
CN003	1-560-459-00	PIN, CONNECTOR 3P
CN004♠:	1-560-460-00	PIN, CONNECTOR 4P
CN005	1-560-461-00	PIN, CONNECTOR 5P
CN006♠:	1-564-012-00	PIN, CONNECTOR 2P
CN007♠:	1-560-462-00	PIN, CONNECTOR 6P
CN008♠:	1-560-455-00	PIN, CONNECTOR 2P

TRIMMER

Ref.No	Part NO.	Description
CV001	1-141-275-00	CAP, TRIMMER

DIODE

Ref.No	Part NO.	Description
D001	8-719-100-68	DIODE RD13E-B2
D002	8-719-100-68	DIODE RD13E-B2
D005	8-719-110-07	DIODE RD10E-B
D008	=>8-719-911-19	DIODE 1SS119
D009	=>8-719-911-19	DIODE 1SS119
D010	=>8-719-911-19	DIODE 1SS119
D011	=>8-719-911-19	DIODE 1SS119
D012	=>8-719-911-19	DIODE 1SS119
D013	=>8-719-911-19	DIODE 1SS119
D016	=>8-719-911-19	DIODE 1SS119
D017	=>8-719-911-19	DIODE 1SS119
D019	=>8-719-911-19	DIODE 1SS119
D020	=>8-719-911-19	DIODE 1SS119
D021	=>8-719-911-19	DIODE 1SS119
D022	=>8-719-911-19	DIODE 1SS119

Ref.No	Part NO.	Description	Remark
D024	8-719-100-34	DIODE RD5.6E-B1	

DELAY LINE

Ref.No	Part NO.	Description
DL001	1-415-273-00	DELAY LINE (1H)
DL002	1-415-198-00	DELAY LINE (1H)
DL003	1-415-282-00	DELAY LINE
DL003	1-415-282-00	DELAY LINE

FUSE

Ref.No	Part NO.	Description
F001 ⚠.	1-532-279-11	FUSE, TIME LAG 0.5A

IC

Ref.No	Part NO.	Description
IC001	8-759-208-94	IC CX894
IC002	=>8-758-661-00	IC CX866B
IC003	8-759-208-67	IC CX867
IC004	8-741-102-80	IC BX1028
IC005	8-741-102-90	IC BX1029
IC006	8-741-103-00	IC BX1030
IC007	8-759-240-69	IC TC4069UBP
IC008	=>8-758-691-00	IC CX869A
IC009	8-759-208-94	IC CX894
IC010	8-752-000-80	IC CX20008
IC011	8-759-600-08	IC CX870A
IC012	8-759-608-82	IC CX882
IC013	8-759-919-05	IC CX7905A
IC015	=>8-759-601-01	IC CX864A
IC016	=>8-749-910-33	IC BX1033A
IC017	=>8-749-910-34	IC BX1034A
IC018	8-741-103-20	IC BX1032
IC019	8-759-908-68	IC CX868
IC021	8-759-240-53	IC TC4053BP

COIL

Ref.No	Part NO.	Description
L001	1-408-397-00	MICRO INDUCTOR 1UH
L002	1-408-397-00	MICRO INDUCTOR 1UH
L003	1-407-500-00	MICRO INDUCTOR 4.7MMH
L004	1-408-427-00	MICRO INDUCTOR 330UH
L005	1-408-420-00	MICRO INDUCTOR 82UH
L006	1-407-503-00	MICRO INDUCTOR 8.2MMH
L007	1-408-408-00	MICRO INDUCTOR 8.2UH
L008	1-408-429-00	MICRO INDUCTOR 470UH
L009	1-407-503-00	MICRO INDUCTOR 8.2MMH
L010	1-408-429-00	MICRO INDUCTOR 470UH
L011	1-407-503-00	MICRO INDUCTOR 8.2MMH
L012	1-408-419-00	MICRO INDUCTOR 68UH
L013	1-408-425-00	MICRO INDUCTOR 220UH
L015	1-408-421-00	MICRO INDUCTOR 100UH
L018	1-408-415-00	MICRO INDUCTOR 33UH
L019	1-408-423-00	MICRO INDUCTOR 150UH
L020	1-408-422-00	MICRO INDUCTOR 120UH
L021	1-408-424-00	MICRO INDUCTOR 180UH
L022	1-408-422-00	MICRO INDUCTOR 120UH
L023	1-408-421-00	MICRO INDUCTOR 100UH

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
L024	1-407-496-00	MICRO INDUCTOR 2.2MMH	
L025	1-408-413-00	MICRO INDUCTOR 22UH	
		FILTER	
LPF001	1-235-097-00	FILTER, LOW PASS	
		VARIABLE COIL	
LV001	1-408-512-00	COIL (VARIABLE)	
		TRANSISTOR	
Q001	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	=>8-729-245-83	TRANSISTOR 2SC2458	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
Q005	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q006	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458	
Q008	=>8-729-245-83	TRANSISTOR 2SC2458	
Q009	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q010	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q011	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q012	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q013	=>8-729-245-83	TRANSISTOR 2SC2458	
Q014	=>8-729-245-83	TRANSISTOR 2SC2458	
Q016	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q018	=>8-729-113-33	TRANSISTOR 2SB733-4	
Q019	=>8-729-245-83	TRANSISTOR 2SC2458	
Q020	=>8-729-245-83	TRANSISTOR 2SC2458	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458	
Q024	=>8-729-245-83	TRANSISTOR 2SC2458	
Q025	=>8-729-245-83	TRANSISTOR 2SC2458	
		RESISTOR	
R003	1-247-804-00	CARBON 75 5% 1/6W	
R005	1-247-869-00	CARBON 39K 5% 1/6W	
R007	1-247-849-00	CARBON 5.6K 5% 1/6W	
R008	1-247-832-00	CARBON 1.1K 5% 1/6W	
R009	1-247-832-00	CARBON 1.1K 5% 1/6W	
R010	1-247-831-00	CARBON 1K 5% 1/6W	
R011	1-247-867-00	CARBON 33K 5% 1/6W	
R012	1-247-871-00	CARBON 47K 5% 1/6W	
R013	1-247-810-00	CARBON 130 5% 1/6W	
R014	1-247-810-00	CARBON 130 5% 1/6W	
R015	1-247-831-00	CARBON 1K 5% 1/6W	
R016	1-247-831-00	CARBON 1K 5% 1/6W	
R017	1-247-830-00	CARBON 910 5% 1/6W	
R018	1-247-831-00	CARBON 1K 5% 1/6W	
R019	1-247-847-00	CARBON 4.7K 5% 1/6W	
R020	1-247-828-00	CARBON 750 5% 1/6W	
R021	1-247-812-00	CARBON 160 5% 1/6W	
R022	1-247-847-00	CARBON 4.7K 5% 1/6W	
R023	1-247-831-00	CARBON 1K 5% 1/6W	
R024	1-247-846-00	CARBON 4.3K 5% 1/6W	
R025	1-247-828-00	CARBON 750 5% 1/6W	
R026	1-247-859-00	CARBON 15K 5% 1/6W	
R027	1-247-875-00	CARBON 68K 5% 1/6W	
R028	1-247-831-00	CARBON 1K 5% 1/6W	
R029	1-247-839-00	CARBON 2.2K 5% 1/6W	
R030	1-247-879-00	CARBON 100K 5% 1/6W	
R031	1-247-882-00	CARBON 130K 5% 1/6W	
R032	1-247-895-00	CARBON 470K 5% 1/6W	
R033	1-247-857-00	CARBON 12K 5% 1/6W	
R034	1-247-869-00	CARBON 39K 5% 1/6W	
R035	1-247-878-00	CARBON 91K 5% 1/6W	
R036	1-247-883-00	CARBON 150K 5% 1/6W	
R037	1-247-879-00	CARBON 100K 5% 1/6W	
R038	1-247-871-00	CARBON 47K 5% 1/6W	
R039	1-247-863-00	CARBON 22K 5% 1/6W	
R040	1-247-859-00	CARBON 15K 5% 1/6W	
R041	1-247-855-00	CARBON 10K 5% 1/6W	
R042	1-247-847-00	CARBON 4.7K 5% 1/6W	
R043	1-247-838-00	CARBON 2K 5% 1/6W	
R045	1-247-841-00	CARBON 2.7K 5% 1/6W	
R046	1-247-848-00	CARBON 5.1K 5% 1/6W	
R047	1-247-851-00	CARBON 6.8K 5% 1/6W	
R048	1-247-841-00	CARBON 2.7K 5% 1/6W	
R049	1-247-819-00	CARBON 330 5% 1/6W	
R050	1-247-863-00	CARBON 22K 5% 1/6W	
R051	1-247-855-00	CARBON 10K 5% 1/6W	
R052	1-247-828-00	CARBON 750 5% 1/6W	
R053	1-247-855-00	CARBON 10K 5% 1/6W	
R054	1-247-841-00	CARBON 2.7K 5% 1/6W	
R055	1-247-854-00	CARBON 9.1K 5% 1/6W	
R056	1-247-855-00	CARBON 10K 5% 1/6W	
R057	1-247-865-00	CARBON 27K 5% 1/6W	
R058	1-247-866-00	CARBON 30K 5% 1/6W	
R059	1-247-860-00	CARBON 16K 5% 1/6W	
R060	1-247-823-00	CARBON 470 5% 1/6W	
R061	1-247-823-00	CARBON 470 5% 1/6W	
R062	1-247-831-00	CARBON 1K 5% 1/6W	
R063	1-247-809-00	CARBON 120 5% 1/6W	
R064	1-247-852-00	CARBON 7.5K 5% 1/6W	
R065	1-247-839-00	CARBON 2.2K 5% 1/6W	
R066	1-247-843-00	CARBON 3.3K 5% 1/6W	
R067	1-247-855-00	CARBON 10K 5% 1/6W	
R068	1-247-871-00	CARBON 47K 5% 1/6W	
R069	1-247-873-00	CARBON 56K 5% 1/6W	
R070	1-247-873-00	CARBON 56K 5% 1/6W	
R071	1-247-885-00	CARBON 180K 5% 1/6W	
R072	1-247-865-00	CARBON 27K 5% 1/6W	
R073	1-247-870-00	CARBON 43K 5% 1/6W	
R074	1-247-831-00	CARBON 1K 5% 1/6W	
R075	1-247-835-00	CARBON 1.5K 5% 1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description				Remark
R076	1-247-831-00	CARBON	1K	5%	1/6W	
R077	1-247-835-00	CARBON	1.5K	5%	1/6W	
R078	1-247-863-00	CARBON	22K	5%	1/6W	
R079	1-247-847-00	CARBON	4.7K	5%	1/6W	
R080	1-247-821-00	CARBON	390	5%	1/6W	
R081	1-247-839-00	CARBON	2.2K	5%	1/6W	
R082	1-247-841-00	CARBON	2.7K	5%	1/6W	
R083	1-247-831-00	CARBON	1K	5%	1/6W	
R084	1-247-821-00	CARBON	390	5%	1/6W	
R085	1-247-821-00	CARBON	390	5%	1/6W	
R086	1-247-821-00	CARBON	390	5%	1/6W	
R087	1-247-821-00	CARBON	390	5%	1/6W	
R088	1-247-821-00	CARBON	390	5%	1/6W	
R089	1-247-839-00	CARBON	2.2K	5%	1/6W	
R090	1-247-839-00	CARBON	2.2K	5%	1/6W	
R091	1-247-873-00	CARBON	56K	5%	1/6W	
R092	1-247-847-00	CARBON	4.7K	5%	1/6W	
R093	1-247-831-00	CARBON	1K	5%	1/6W	
R094	1-247-873-00	CARBON	56K	5%	1/6W	
R095	1-247-871-00	CARBON	47K	5%	1/6W	
R096	1-247-871-00	CARBON	47K	5%	1/6W	
R097	1-247-863-00	CARBON	22K	5%	1/6W	
R098	1-247-863-00	CARBON	22K	5%	1/6W	
R099	1-247-863-00	CARBON	22K	5%	1/6W	
R100	1-247-871-00	CARBON	47K	5%	1/6W	
R101	1-247-855-00	CARBON	10K	5%	1/6W	
R102	1-247-869-00	CARBON	39K	5%	1/6W	
R103	1-247-847-00	CARBON	4.7K	5%	1/6W	
R104	1-247-831-00	CARBON	1K	5%	1/6W	
R105	1-247-831-00	CARBON	1K	5%	1/6W	
R106	1-247-864-00	CARBON	24K	5%	1/6W	
R107	1-247-831-00	CARBON	1K	5%	1/6W	
R109	1-247-886-00	CARBON	200K	5%	1/6W	
R110	1-247-831-00	CARBON	1K	5%	1/6W	
R111	1-247-840-00	CARBON	2.4K	5%	1/6W	
R112	1-247-831-00	CARBON	1K	5%	1/6W	
R113	1-247-858-00	CARBON	13K	5%	1/6W	
R114	1-247-863-00	CARBON	22K	5%	1/6W	
R115	1-247-842-00	CARBON	3K	5%	1/6W	
R116	1-247-862-00	CARBON	20K	5%	1/6W	
R117	1-247-879-00	CARBON	100K	5%	1/6W	
R118	1-247-879-00	CARBON	100K	5%	1/6W	
R120	1-247-839-00	CARBON	2.2K	5%	1/6W	
R121	1-247-871-00	CARBON	47K	5%	1/6W	
R123	1-247-838-00	CARBON	2K	5%	1/6W	
R124	1-247-819-00	CARBON	330	5%	1/6W	
R125	1-247-844-00	CARBON	3.6K	5%	1/6W	
R126	1-247-875-00	CARBON	68K	5%	1/6W	
R127	1-247-843-00	CARBON	3.3K	5%	1/6W	
R132	1-247-831-00	CARBON	1K	5%	1/6W	
R133	1-247-873-00	CARBON	56K	5%	1/6W	
R134	1-247-883-00	CARBON	150K	5%	1/6W	
R135	1-247-867-00	CARBON	33K	5%	1/6W	

Ref.No	Part NO.	Description				Remark
R138	1-247-869-00	CARBON	39K	5%	1/6W	
R139	1-247-831-00	CARBON	1K	5%	1/6W	
R140	1-247-890-00	CARBON	300K	5%	1/6W	
R141	1-247-849-00	CARBON	5.6K	5%	1/6W	
R142	1-247-837-00	CARBON	1.8K	5%	1/6W	
R143	1-247-824-00	CARBON	510	5%	1/6W	
R144	1-247-837-00	CARBON	1.8K	5%	1/6W	
R145	1-247-854-00	CARBON	9.1K	5%	1/6W	
R146	1-247-841-00	CARBON	2.7K	5%	1/6W	
R147	1-247-855-00	CARBON	10K	5%	1/6W	
R148	1-247-871-00	CARBON	47K	5%	1/6W	
R149	1-247-871-00	CARBON	47K	5%	1/6W	
R150	1-247-885-00	CARBON	180K	5%	1/6W	
R151	1-247-868-00	CARBON	36K	5%	1/6W	
R152	1-247-811-00	CARBON	150	5%	1/6W	
R153	1-247-877-00	CARBON	82K	5%	1/6W	
R154	1-247-831-00	CARBON	1K	5%	1/6W	
R156	1-247-871-00	CARBON	47K	5%	1/6W	
R157	1-247-831-00	CARBON	1K	5%	1/6W	
R158	1-247-871-00	CARBON	47K	5%	1/6W	
R161	1-247-882-00	CARBON	130K	5%	1/6W	
R162	1-247-887-00	CARBON	220K	5%	1/6W	
R163	1-247-837-00	CARBON	1.8K	5%	1/6W	
R164	1-247-830-00	CARBON	910	5%	1/6W	
R165	1-247-855-00	CARBON	10K	5%	1/6W	
R166	1-247-822-00	CARBON	430	5%	1/6W	
R167	1-247-838-00	CARBON	2K	5%	1/6W	
R168	1-247-873-00	CARBON	56K	5%	1/6W	
R169	1-247-873-00	CARBON	56K	5%	1/6W	
R170	1-247-829-00	CARBON	820	5%	1/6W	
R179	1-247-855-00	CARBON	10K	5%	1/6W	
R180	1-247-855-00	CARBON	10K	5%	1/6W	
R181	1-247-804-00	CARBON	75	5%	1/6W	
R182	1-247-867-00	CARBON	33K	5%	1/6W	
R185	1-247-811-00	CARBON	150	5%	1/6W	
R186	1-247-811-00	CARBON	150	5%	1/6W	
R187	1-247-818-00	CARBON	300	5%	1/6W	
R188	1-247-803-00	CARBON	68	5%	1/6W	
R194	1-247-871-00	CARBON	47K	5%	1/6W	
R195	1-247-853-00	CARBON	8.2K	5%	1/6W	
R197	1-247-818-00	CARBON	300	5%	1/6W	
R199	1-247-875-00	CARBON	68K	5%	1/6W	
R201	1-247-842-00	CARBON	3K	5%	1/6W	
R207	1-247-838-00	CARBON	2K	5%	1/6W	
R208	1-247-864-00	CARBON	24K	5%	1/6W	
R209	1-247-864-00	CARBON	24K	5%	1/6W	
R210	1-247-803-00	CARBON	68	5%	1/6W	
R211	1-247-829-00	CARBON	820	5%	1/6W	
R212	1-247-807-00	CARBON	100	5%	1/6W	

VARIABLE RESISTOR

RV001	1-226-703-00	RES, ADJ, METAL GLAZE 10K
RV002	1-226-774-00	RES, ADJ, METAL GLAZE 47K

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
RV003	1-226-702-00	RES, ADJ, METAL GLAZE 2.2K	
RV004	1-226-774-00	RES, ADJ, METAL GLAZE 47K	
RV005	1-226-770-00	RES, ADJ, METAL GLAZE 470	
RV006	1-226-772-00	RES, ADJ, METAL GLAZE 4.7K	
RV007	1-226-775-00	RES, ADJ, METAL GLAZE 100K	
RV008	1-226-775-00	RES, ADJ, METAL GLAZE 100K	
RV009	1-226-774-00	RES, ADJ, METAL GLAZE 47K	
RV010	1-226-773-00	RES, ADJ, METAL GLAZE 22K	
RV011	1-226-708-00	RES, ADJ, SOLID 2.2K	
RV012	1-226-706-00	RES, ADJ, SOLID 470	
RV013	1-226-773-00	RES, ADJ, METAL GLAZE 22K	
RV014	1-226-773-00	RES, ADJ, METAL GLAZE 22K	
RV015	1-226-703-00	RES, ADJ, METAL GLAZE 10K	
RV018	1-226-703-00	RES, ADJ, METAL GLAZE 10K	
RV019	1-226-773-00	RES, ADJ, METAL GLAZE 22K	
RV020	1-226-709-00	RES, ADJ, SOLID 4.7K	
RV021	1-226-715-00	RES, ADJ, SOLID 470K	
RV022	1-226-774-00	RES, ADJ, METAL GLAZE 47K	
RV023	1-226-774-00	RES, ADJ, METAL GLAZE 47K	
RV024	1-226-773-00	RES, ADJ, METAL GLAZE 22K	
RV025	1-226-773-00	RES, ADJ, METAL GLAZE 22K	

SWITCH

Ref.No	Part NO.	Description
SW001	1-552-821-00	SWITCH, SLIDE

TRANSFORMER

Ref.No	Part NO.	Description
T001	1-426-093-00	COIL, REC C BPT

CRYSTAL

Ref.No	Part NO.	Description
X001	1-527-345-00	CRYSTAL, OSC

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⚠:A-6713-213-A AM-6 BOARD, COMPLETE
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Part NO.	Description
⚠:3-675-552-00	CASE (A) (MAIN), SHIELD, AM
⚠:3-675-554-00	CASE (B) (MAIN), SHIELD, AM
⚠:3-687-302-01	LID, BOTTOM, SHIELD CASE (A)
⚠:3-687-303-01	LID, UPPER, SHIELD CASE (A)
⚠:3-687-305-01	LID, UPPER, SHIELD CASE (B)
⚠:3-687-306-01	LID, BOTTOM, SHIELD CASE (B)

CAPACITOR

Ref.No	Part NO.	Description			Remark
C001	1-123-306-00	ELECT	47MF	20%	10V
C002	1-123-306-00	ELECT	47MF	20%	10V
C003	1-123-332-00	ELECT	47MF	20%	16V
C004	1-123-332-00	ELECT	47MF	20%	16V
C005	1-123-306-00	ELECT	47MF	20%	10V
C006	1-123-306-00	ELECT	47MF	20%	10V
C007	1-123-356-00	ELECT	10MF	20%	16V
C008	1-161-013-00	CERAMIC	0.01MF	10%	25V
C009	1-123-333-00	ELECT	100MF	20%	16V
C010	1-123-321-00	ELECT	220MF	20%	16V
C011	1-123-332-00	ELECT	47MF	20%	16V
C012	1-123-318-00	ELECT	33MF	20%	16V
C013	1-161-013-00	CERAMIC	0.01MF	10%	25V
C014	1-161-055-00	CERAMIC	0.022MF	10%	25V
C015	1-136-215-00	FILM	0.0068MF	10%	400V
C016	1-123-330-00	ELECT	22MF	20%	16V
C017	1-123-307-00	ELECT	100MF	20%	10V
C018	1-123-307-00	ELECT	100MF	20%	10V
C019	1-123-306-00	ELECT	47MF	20%	10V
C020	1-123-306-00	ELECT	47MF	20%	10V
C021	1-123-318-00	ELECT	33MF	20%	16V
C022	1-123-318-00	ELECT	33MF	20%	16V
C023	1-123-369-00	ELECT	4.7MF	20%	25V
C024	1-123-380-00	ELECT	1MF	20%	50V
C027	1-161-013-00	CERAMIC	0.01MF	10%	25V
C028	1-161-013-00	CERAMIC	0.01MF	10%	25V
C029	1-123-330-00	ELECT	22MF	20%	16V
C030	1-123-330-00	ELECT	22MF	20%	16V
C031	1-123-306-00	ELECT	47MF	20%	10V
C032	1-123-306-00	ELECT	47MF	20%	10V
C033	1-123-306-00	ELECT	47MF	20%	10V
C034	1-123-306-00	ELECT	47MF	20%	10V
C035	1-123-298-00	ELECT	470MF	20%	6.3V
C101	1-123-369-00	ELECT	4.7MF	20%	25V
C102	1-123-333-00	ELECT	100MF	20%	16V
C103	1-123-330-00	ELECT	22MF	20%	16V
C104	1-123-369-00	ELECT	4.7MF	20%	25V
C105	1-123-356-00	ELECT	10MF	20%	16V
C106	1-161-047-00	CERAMIC	0.0047MF	10%	25V
C107	1-123-356-00	ELECT	10MF	20%	16V
C108	1-123-356-00	ELECT	10MF	20%	16V
C109	1-161-039-00	CERAMIC	0.001MF	10%	25V
C111	1-102-106-00	CERAMIC	100PF	10%	50V
C112	1-123-330-00	ELECT	22MF	20%	16V
C113	1-130-485-00	MYLAR	0.015MF	5%	50V
C114	1-123-356-00	ELECT	10MF	20%	16V
C115	1-123-356-00	ELECT	10MF	20%	16V
C116	1-130-480-00	MYLAR	0.0056MF	5%	50V
C117	1-130-471-00	MYLAR	0.001MF	5%	50V
C118	1-136-160-00	MYLAR	0.039MF	5%	50V
C119	1-130-483-00	MYLAR	0.01MF	5%	50V
C120	1-161-055-00	CERAMIC	0.022MF	10%	25V
C121	1-123-369-00	ELECT	4.7MF	20%	25V
C122	1-123-380-00	ELECT	1MF	20%	50V
C123	1-102-110-00	CERAMIC	220PF	10%	50V
C124	1-123-369-00	ELECT	4.7MF	20%	25V
C125	1-123-369-00	ELECT	4.7MF	20%	25V
C126	1-123-356-00	ELECT	10MF	20%	16V
C127	1-123-381-00	ELECT	2.2MF	20%	50V
C128	1-123-307-00	ELECT	100MF	20%	6.3V
C130	1-123-369-00	ELECT	4.7MF	20%	25V
C131	1-123-356-00	ELECT	10MF	20%	16V

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description			Remark
C132	1-123-356-00	ELECT	10MF	20%	16V
C133	1-161-039-00	CERAMIC	0.001MF	10%	25V
C134	1-123-356-00	ELECT	10MF	20%	16V
C135	1-123-356-00	ELECT	10MF	20%	16V
C136	1-102-112-00	CERAMIC	330PF	10%	50V
C137	1-130-480-00	MYLAR	0.0056MF	5%	50V
C138	1-123-356-00	ELECT	10MF	20%	16V
C139	1-123-356-00	ELECT	10MF	20%	16V
C140	1-123-318-00	ELECT	33MF	20%	16V
C142	1-123-607-00	ELECT	0.1MF	20%	50V
C143	1-161-055-00	CERAMIC	0.022MF	10%	25V
C144	1-123-356-00	ELECT	10MF	20%	16V
C145	1-123-382-00	ELECT	3.3MF	20%	50V
C146	1-130-497-00	MYLAR	0.15MF	5%	50V
C147	1-102-973-00	CERAMIC	100PF	5%	50V
C148	1-102-973-00	CERAMIC	100PF	5%	50V
C150	1-130-480-00	MYLAR	0.0056MF	5%	50V
C201	1-123-369-00	ELECT	4.7MF	20%	25V
C202	1-123-333-00	ELECT	100MF	20%	16V
C203	1-123-330-00	ELECT	22MF	20%	16V
C204	1-123-369-00	ELECT	4.7MF	20%	25V
C205	1-123-356-00	ELECT	10MF	20%	16V
C206	1-161-047-00	CERAMIC	0.0047MF	10%	25V
C207	1-123-356-00	ELECT	10MF	20%	16V
C208	1-123-356-00	ELECT	10MF	20%	16V
C209	1-161-039-00	CERAMIC	0.001MF	10%	25V
C211	1-102-106-00	CERAMIC	100PF	10%	50V
C212	1-123-330-00	ELECT	22MF	20%	16V
C213	1-130-485-00	MYLAR	0.015MF	5%	50V
C214	1-123-356-00	ELECT	10MF	20%	16V
C215	1-123-356-00	ELECT	10MF	20%	16V
C216	1-130-480-00	MYLAR	0.0056MF	5%	50V
C217	1-130-471-00	MYLAR	0.001MF	5%	50V
C218	1-136-160-00	MYLAR	0.039MF	5%	50V
C219	1-130-483-00	MYLAR	0.01MF	5%	50V
C220	1-161-055-00	CERAMIC	0.022MF	10%	25V
C221	1-123-369-00	ELECT	4.7MF	20%	25V
C222	1-123-380-00	ELECT	1MF	20%	50V
C223	1-102-110-00	CERAMIC	220PF	10%	50V
C224	1-123-369-00	ELECT	4.7MF	20%	25V
C225	1-123-369-00	ELECT	4.7MF	20%	25V
C226	1-123-356-00	ELECT	10MF	20%	16V
C227	1-123-381-00	ELECT	2.2MF	20%	50V
C228	1-123-307-00	ELECT	100MF	20%	6.3V
C230	1-123-369-00	ELECT	4.7MF	20%	25V
C231	1-123-356-00	ELECT	10MF	20%	16V
C232	1-123-356-00	ELECT	10MF	20%	16V
C233	1-161-039-00	CERAMIC	0.001MF	10%	25V
C234	1-123-356-00	ELECT	10MF	20%	16V
C235	1-123-356-00	ELECT	10MF	20%	16V
C236	1-102-112-00	CERAMIC	330PF	10%	50V
C237	1-130-480-00	MYLAR	0.0056MF	5%	50V
C238	1-123-356-00	ELECT	10MF	20%	16V

Ref.No	Part NO.	Description			Remark
C239	1-123-356-00	ELECT	10MF	20%	16V
C240	1-123-318-00	ELECT	33MF	20%	16V
C242	1-123-607-00	ELECT	0.1MF	20%	50V
C243	1-161-055-00	CERAMIC	0.022MF	10%	25V
C244	1-123-356-00	ELECT	10MF	20%	16V
C245	1-123-382-00	ELECT	3.3MF	20%	50V
C246	1-130-497-00	MYLAR	0.15MF	5%	50V
C247	1-102-973-00	CERAMIC	100PF	5%	50V
C248	1-102-973-00	CERAMIC	100PF	5%	50V
C250	1-130-480-00	MYLAR	0.0056MF	5%	50V

CONNECTOR

CN001♠:	1-560-591-00	PIN, CONNECTOR 7P
CN002♠:	1-560-466-00	PIN, CONNECTOR 3P
CN003♠:	1-560-466-00	PIN, CONNECTOR 3P
CN004♠:	1-564-003-00	PIN, CONNECTOR 4P
CN005♠:	1-560-467-00	PIN, CONNECTOR 4P
CN006♠:	1-560-467-00	PIN, CONNECTOR 4P
CN007♠:	1-560-469-00	PIN, CONNECTOR 6P
CN008♠:	1-560-468-00	PIN, CONNECTOR 5P
CN009♠:	1-560-469-00	PIN, CONNECTOR 6P
CN010♠:	1-560-466-00	PIN, CONNECTOR 3P
CN011♠:	1-560-591-00	PIN, CONNECTOR 7P
CN012♠:	1-560-466-00	PIN, CONNECTOR 3P
CN013♠:	1-560-456-00	PIN, CONNECTOR 2P

TRIMAR

CV101	1-141-215-00	CAP, TRIMAR
CV201	1-141-215-00	CAP, TRIMAR

DIODE

D001	=>8-719-911-19	DIODE 1S119
D002	=>8-719-911-19	DIODE 1S119
D003	8-719-100-48	DIODE RD8.2E-B2
D004	8-719-100-48	DIODE RD8.2E-B2
D005	=>8-719-911-19	DIODE 1S119
D006	=>8-719-911-19	DIODE 1S119
D007	=>8-719-911-19	DIODE 1S119
D008	=>8-719-911-19	DIODE 1S119
D009	=>8-719-911-19	DIODE 1S119
D010	=>8-719-911-19	DIODE 1S119
D011	=>8-719-911-19	DIODE 1S119
D012	8-719-000-06	DIODE MC921
D013	=>8-719-911-19	DIODE 1S119
D014	=>8-719-911-19	DIODE 1S119
D101	=>8-719-911-19	DIODE 1S119
D201	=>8-719-911-19	DIODE 1S119

IC

IC002	8-759-705-62	IC NJM4562D-D
IC003	8-759-100-08	IC UPC1571C
IC004	8-759-240-66	IC TC4066BP
IC005	8-759-700-62	IC NJM4562D

When indicating parts by reference number, please include the board name.

AM-6

Ref.No	Part NO.	Description	Remark
IC006	8-759-745-56	IC NJM4556D	
IC007	8-759-745-60	IC NJM4560D	
IC101	8-759-800-30	IC LA7040	
IC102	=>8-759-240-53	IC TC4053BP	
IC103	8-759-145-58	IC UPC4558C	
IC201	8-759-800-30	IC LA7040	
IC202	=>8-759-240-53	IC TC4053BP	
IC203	8-759-145-58	IC UPC4558C	
		COIL	
L001	1-408-579-00	MICRO INDUCTOR 220UH	
L101	1-408-583-00	MICRO INDUCTOR 33MMH	
L201	1-408-583-00	MICRO INDUCTOR 33MMH	
		FILTER	
LPF101	1-235-272-00	FILTER, LOW PASS	
LPF201	1-235-272-00	FILTER, LOW PASS	
		TRANSISTOR	
Q001	8-729-967-32	TRANSISTOR 2SC2673	
Q002	8-729-988-12	TRANSISTOR 2SA881	
Q003	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
Q005	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q006	8-729-900-89	TRANSISTOR DTC144ES	
Q007	8-729-900-89	TRANSISTOR DTC144ES	
Q008	8-729-900-89	TRANSISTOR DTC144ES	
Q009	8-729-900-89	TRANSISTOR DTC144ES	
Q010	8-729-988-12	TRANSISTOR 2SA881	
Q011	=>8-729-245-83	TRANSISTOR 2SC2458	
Q012	8-729-967-32	TRANSISTOR 2SC2673	
Q014	8-729-900-36	TRANSISTOR DTC124ES	
Q015	8-729-900-89	TRANSISTOR DTC144ES	
Q016	=>8-729-245-83	TRANSISTOR 2SC2458	
Q017	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q018	8-729-900-89	TRANSISTOR DTC144ES	
Q019	8-729-900-89	TRANSISTOR DTC144ES	
Q020	=>8-729-245-83	TRANSISTOR 2SC2458	
Q101	=>8-729-245-83	TRANSISTOR 2SC2458	
Q102	=>8-729-245-83	TRANSISTOR 2SC2458	
Q103	=>8-729-245-83	TRANSISTOR 2SC2458	
Q104	=>8-729-245-83	TRANSISTOR 2SC2458	
Q105	8-729-117-54	TRANSISTOR 2SA1175-K	
Q106	=>8-729-245-83	TRANSISTOR 2SC2458	
Q107	=>8-729-245-83	TRANSISTOR 2SC2458	
Q108	=>8-729-245-83	TRANSISTOR 2SC2458	
Q201	=>8-729-245-83	TRANSISTOR 2SC2458	
Q202	=>8-729-245-83	TRANSISTOR 2SC2458	
Q203	=>8-729-245-83	TRANSISTOR 2SC2458	
Q204	=>8-729-245-83	TRANSISTOR 2SC2458	
Q205	8-729-117-54	TRANSISTOR 2SA1175	
Q206	=>8-729-245-83	TRANSISTOR 2SC2458	

Ref.No	Part NO.	Description				Remark
Q207	=>8-729-245-83	TRANSISTOR 2SC2458				
Q208	=>8-729-245-83	TRANSISTOR 2SC2458				
		IC LINK				
R056	⚠.1-532-605-11	LINK IC ICP-N10				
		RESISTOR				
R001	⚠.1-212-857-00	FUSIBLE	10	5%	1/4W	F
R002	⚠.1-212-869-00	FUSIBLE	33	5%	1/4W	F
R003	⚠.1-212-869-00	FUSIBLE	33	5%	1/4W	F
R004	1-247-833-00	CARBON	1.2K	5%	1/6W	
R005	1-247-851-00	CARBON	6.8K	5%	1/6W	
R006	1-247-863-00	CARBON	22K	5%	1/6W	
R007	1-247-839-00	CARBON	2.2K	5%	1/6W	
R008	1-247-835-00	CARBON	1.5K	5%	1/6W	
R009	1-247-807-00	CARBON	100	5%	1/6W	
R010	1-247-831-00	CARBON	1K	5%	1/6W	
R011	1-247-831-00	CARBON	1K	5%	1/6W	
R012	1-247-853-00	CARBON	8.2K	5%	1/6W	
R013	1-247-875-00	CARBON	68K	5%	1/6W	
R014	⚠.1-212-869-00	FUSIBLE	33	5%	1/4W	F
R015	1-247-867-00	CARBON	33K	5%	1/6W	
R016	1-247-847-00	CARBON	4.7K	5%	1/6W	
R017	⚠.1-212-857-00	FUSIBLE	10	5%	1/4W	F
R018	1-247-859-00	CARBON	15K	5%	1/6W	
R019	1-247-867-00	CARBON	33K	5%	1/6W	
R023	1-247-879-00	CARBON	100K	5%	1/6W	
R024	1-247-848-00	CARBON	5.1K	5%	1/6W	
R025	1-247-871-00	CARBON	47K	5%	1/6W	
R026	1-247-839-00	CARBON	2.2K	5%	1/6W	
R027	1-247-839-00	CARBON	2.2K	5%	1/6W	
R028	1-247-839-00	CARBON	2.2K	5%	1/6W	
R029	1-247-871-00	CARBON	47K	5%	1/6W	
R030	1-247-873-00	CARBON	56K	5%	1/6W	
R031	1-247-867-00	CARBON	33K	5%	1/6W	
R032	1-247-879-00	CARBON	100K	5%	1/6W	
R033	1-247-875-00	CARBON	68K	5%	1/6W	
R034	1-247-863-00	CARBON	22K	5%	1/6W	
R035	1-247-854-00	CARBON	9.1K	5%	1/6W	
R036	1-247-819-00	CARBON	330	5%	1/6W	
R037	1-247-799-00	CARBON	47	5%	1/6W	
R038	1-247-799-00	CARBON	47	5%	1/6W	
R039	1-247-861-00	CARBON	18K	5%	1/6W	
R040	1-247-879-00	CARBON	100K	5%	1/6W	
R041	1-247-831-00	CARBON	1K	5%	1/6W	
R042	1-247-831-00	CARBON	1K	5%	1/6W	
R043	1-247-879-00	CARBON	100K	5%	1/6W	
R044	1-247-855-00	CARBON	10K	5%	1/6W	
R048	1-247-871-00	CARBON	47K	5%	1/6W	
R052	1-247-873-00	CARBON	56K	5%	1/6W	
R053	1-247-829-00	CARBON	820	5%	1/6W	
R054	1-247-829-00	CARBON	820	5%	1/6W	

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description				Remark
R057	1-247-831-00	CARBON	1K	5%	1/6W	
R101	1-247-847-00	CARBON	4.7K	5%	1/6W	
R103	1-247-867-00	CARBON	33K	5%	1/6W	
R104	1-247-833-00	CARBON	1.2K	5%	1/6W	
R105	1-247-831-00	CARBON	1K	5%	1/6W	
R106	1-247-843-00	CARBON	3.3K	5%	1/6W	
R107	1-247-863-00	CARBON	22K	5%	1/6W	
R108	1-247-863-00	CARBON	22K	5%	1/6W	
R109	1-247-849-00	CARBON	5.6K	5%	1/6W	
R110	1-247-879-00	CARBON	100K	5%	1/6W	
R111	1-247-831-00	CARBON	1K	5%	1/6W	
R112	1-247-867-00	CARBON	33K	5%	1/6W	
R113	1-247-867-00	CARBON	33K	5%	1/6W	
R114	1-247-843-00	CARBON	3.3K	5%	1/6W	
R115	1-247-849-00	CARBON	5.6K	5%	1/6W	
R116	1-247-847-00	CARBON	4.7K	5%	1/6W	
R117	1-247-843-00	CARBON	3.3K	5%	1/6W	
R118	1-247-871-00	CARBON	47K	5%	1/6W	
R119	1-247-783-00	CARBON	10	5%	1/6W	
R120	1-247-871-00	CARBON	47K	5%	1/6W	
R121	1-247-807-00	CARBON	100	5%	1/6W	
R122	1-215-477-00	METAL	220K	1%	1/6W	
R123	1-215-446-00	METAL	11K	1%	1/6W	
R124	1-247-849-00	CARBON	5.6K	5%	1/6W	
R125	1-247-871-00	CARBON	47K	5%	1/6W	
R126	1-247-851-00	CARBON	6.8K	5%	1/6W	
R127	1-247-837-00	CARBON	1.8K	5%	1/6W	
R128	1-215-463-00	METAL	56K	1%	1/6W	
R129	1-215-413-00	METAL	470	1%	1/6W	
R130	1-215-449-00	METAL	15K	1%	1/6W	
R131	1-215-449-00	METAL	15K	1%	1/6W	
R132	1-247-867-00	CARBON	33K	5%	1/6W	
R133	1-247-839-00	CARBON	2.2K	5%	1/6W	
R134	1-247-847-00	CARBON	4.7K	5%	1/6W	
R135	1-247-866-00	CARBON	30K	5%	1/6W	
R136	1-247-859-00	CARBON	15K	5%	1/6W	
R137	1-247-859-00	CARBON	15K	5%	1/6W	
R138	1-215-456-00	METAL	30K	1%	1/6W	
R139	1-247-831-00	CARBON	1K	5%	1/6W	
R140	1-247-887-00	CARBON	220K	5%	1/6W	
R141	1-247-871-00	CARBON	47K	5%	1/6W	
R142	1-247-871-00	CARBON	47K	5%	1/6W	
R143	1-247-870-00	CARBON	43K	5%	1/6W	
R144	1-247-843-00	CARBON	3.3K	5%	1/6W	
R145	1-215-436-00	METAL	4.3K	1%	1/6W	
R146	1-215-439-00	METAL	5.6K	1%	1/6W	
R147	1-215-439-00	CARBON	5.6K	5%	1/6W	
R148	1-215-445-00	METAL	10K	1%	1/6W	
R150	1-215-469-00	METAL	100K	1%	1/6W	
R152	1-247-831-00	CARBON	1K	5%	1/6W	
R154	1-247-845-00	CARBON	3.9K	5%	1/6W	
R156	1-247-871-00	CARBON	47K	5%	1/6W	
R157	1-247-879-00	CARBON	100K	5%	1/6W	
R158	1-247-865-00	CARBON	27K	5%	1/6W	
R159	1-247-801-00	CARBON	56	5%	1/6W	
R160	1-247-857-00	CARBON	12K	5%	1/6W	
R161	1-247-867-00	CARBON	33K	5%	1/6W	
R162	1-247-853-00	CARBON	8.2K	5%	1/6W	
R163	1-247-867-00	CARBON	33K	5%	1/6W	
R164	1-247-831-00	CARBON	1K	5%	1/6W	
R165	1-247-835-00	CARBON	1.5K	5%	1/6W	
R166	1-215-413-00	METAL	470	1%	1/6W	
R167	1-247-879-00	CARBON	100K	5%	1/6W	
R168	1-247-867-00	CARBON	33K	5%	1/6W	
R169	1-247-861-00	CARBON	18K	5%	1/6W	
R170	1-247-837-00	CARBON	1.8K	5%	1/6W	
R171	1-247-855-00	CARBON	10K	5%	1/6W	
R175	1-247-859-00	CARBON	15K	5%	1/6W	
R176	1-247-871-00	CARBON	47K	5%	1/6W	
R177	1-247-851-00	CARBON	6.8K	5%	1/6W	
R178	1-247-843-00	CARBON	3.3K	5%	1/6W	
R179	1-247-871-00	CARBON	47K	5%	1/6W	
R180	1-215-409-00	METAL	330	1%	1/6W	
R181	1-247-855-00	CARBON	10K	5%	1/6W	
R182	1-247-855-00	CARBON	10K	5%	1/6W	
R201	1-247-847-00	CARBON	4.7K	5%	1/6W	
R203	1-247-867-00	CARBON	33K	5%	1/6W	
R204	1-247-833-00	CARBON	1.2K	5%	1/6W	
R205	1-247-831-00	CARBON	1K	5%	1/6W	
R206	1-247-843-00	CARBON	3.3K	5%	1/6W	
R207	1-247-863-00	CARBON	22K	5%	1/6W	
R208	1-247-863-00	CARBON	22K	5%	1/6W	
R209	1-247-849-00	CARBON	5.6K	5%	1/6W	
R210	1-247-879-00	CARBON	100K	5%	1/6W	
R211	1-247-831-00	CARBON	1K	5%	1/6W	
R212	1-247-867-00	CARBON	33K	5%	1/6W	
R213	1-247-867-00	CARBON	33K	5%	1/6W	
R214	1-247-843-00	CARBON	3.3K	5%	1/6W	
R215	1-247-849-00	CARBON	5.6K	5%	1/6W	
R216	1-247-847-00	CARBON	4.7K	5%	1/6W	
R217	1-247-843-00	CARBON	3.3K	5%	1/6W	
R218	1-247-871-00	CARBON	47K	5%	1/6W	
R219	1-247-783-00	CARBON	10	5%	1/6W	
R220	1-247-871-00	CARBON	47K	5%	1/6W	
R221	1-247-807-00	CARBON	100	5%	1/6W	
R222	1-215-477-00	METAL	220K	1%	1/6W	
R223	1-215-446-00	METAL	11K	1%	1/6W	
R224	1-247-849-00	CARBON	5.6K	5%	1/6W	
R225	1-247-871-00	CARBON	47K	5%	1/6W	
R226	1-247-851-00	CARBON	6.8K	5%	1/6W	
R227	1-247-837-00	CARBON	1.8K	5%	1/6W	
R228	1-215-463-00	METAL	56K	1%	1/6W	
R229	1-215-413-00	METAL	470	1%	1/6W	
R230	1-215-449-00	METAL	15K	1%	1/6W	
R231	1-215-449-00	METAL	15K	1%	1/6W	
R232	1-247-867-00	CARBON	33K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description				Remark
R233	1-247-839-00	CARBON	2.2K	5%	1/6W	
R234	1-247-847-00	CARBON	4.7K	5%	1/6W	
R235	1-247-866-00	CARBON	30K	5%	1/6W	
R236	1-247-859-00	CARBON	15K	5%	1/6W	
R237	1-247-859-00	CARBON	15K	5%	1/6W	
R238	1-215-456-00	METAL	30K	1%	1/6W	
R239	1-247-831-00	CARBON	1K	5%	1/6W	
R240	1-247-887-00	CARBON	220K	5%	1/6W	
R241	1-247-871-00	CARBON	47K	5%	1/6W	
R242	1-247-871-00	CARBON	47K	5%	1/6W	
R243	1-247-870-00	CARBON	43K	5%	1/6W	
R244	1-247-843-00	CARBON	3.3K	5%	1/6W	
R245	1-215-436-00	METAL	4.3K	1%	1/6W	
R246	1-215-439-00	METAL	5.6K	1%	1/6W	
R247	1-215-439-00	CARBON	5.6K	5%	1/6W	
R248	1-215-445-00	METAL	10K	1%	1/6W	
R250	1-215-469-00	METAL	100K	1%	1/6W	
R252	1-247-831-00	CARBON	1K	5%	1/6W	
R254	1-247-845-00	CARBON	3.9K	5%	1/6W	
R256	1-247-871-00	CARBON	47K	5%	1/6W	
R257	1-247-879-00	CARBON	100K	5%	1/6W	
R258	1-247-865-00	CARBON	27K	5%	1/6W	
R259	1-247-801-00	CARBON	56	5%	1/6W	
R260	1-247-857-00	CARBON	12K	5%	1/6W	
R261	1-247-867-00	CARBON	33K	5%	1/6W	
R262	1-247-853-00	CARBON	8.2K	5%	1/6W	
R263	1-247-867-00	CARBON	33K	5%	1/6W	
R264	1-247-831-00	CARBON	1K	5%	1/6W	
R265	1-247-835-00	CARBON	1.5K	5%	1/6W	
R266	1-215-413-00	METAL	470	1%	1/6W	
R267	1-247-879-00	CARBON	100K	5%	1/6W	
R268	1-247-867-00	CARBON	33K	5%	1/6W	
R269	1-247-861-00	CARBON	18K	5%	1/6W	
R270	1-247-837-00	CARBON	1.8K	5%	1/6W	
R271	1-247-855-00	CARBON	10K	5%	1/6W	
R275	1-247-859-00	CARBON	15K	5%	1/6W	
R276	1-247-871-00	CARBON	47K	5%	1/6W	
R277	1-247-851-00	CARBON	6.8K	5%	1/6W	
R278	1-247-843-00	CARBON	3.3K	5%	1/6W	
R279	1-247-871-00	CARBON	47K	5%	1/6W	
R280	1-215-409-00	METAL	330	1%	1/6W	
R281	1-247-855-00	CARBON	10K	5%	1/6W	
R282	1-247-855-00	CARBON	10K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part NO.	Description
RV001	1-228-749-00	RES, ADJ, CARBON 22K
RV101	1-228-749-00	RES, ADJ, CARBON 22K
RV102	1-228-745-00	RES, ADJ, CARBON 1K
RV103	1-228-744-00	RES, ADJ, CARBON 470
RV104	1-228-745-00	RES, ADJ, CARBON 1K
RV105	1-228-749-00	RES, ADJ, CARBON 22K
RV106	1-228-748-00	RES, ADJ, CARBON 10K
RV201	1-228-749-00	RES, ADJ, CARBON 22K
RV202	1-228-745-00	RES, ADJ, CARBON 1K
RV203	1-228-744-00	RES, ADJ, CARBON 470
RV204	1-228-745-00	RES, ADJ, CARBON 1K
RV205	1-228-749-00	RES, ADJ, CARBON 22K
RV206	1-228-748-00	RES, ADJ, CARBON 10K

RELAY

Ref.No	Part NO.	Description
RY101	1-515-418-00	RELAY
RY201	1-515-418-00	RELAY

TRANSFORMER

Ref.No	Part NO.	Description
T001	1-433-272-00	COIL, BIAS OSCILLATOR
T101	1-409-374-00	COIL, TRAP
T201	1-409-374-00	COIL, TRAP

THERMISTOR

Ref.No	Part NO.	Description
TH101	1-800-200-00	THERMISTOR S-3K
TH201	1-800-200-00	THERMISTOR S-3K

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♠:A-6713-215-A AF-3P BOARD, COMPLETE

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♠:3-684-072-01 LID, BOTTOM, AF SHIELD CASE(S)
♠:3-684-087-01 CASE (S) (MAIN), SHIELD, AF
3-701-748-00 CLAMP

BPF

Ref.No	Part NO.	Description
BPF001	1-235-367-11	B.P.F
BPF002	1-235-367-11	B.P.F
BPF003	1-235-366-11	B.P.F
BPF004	1-235-366-11	B.P.F

CAPACITOR

Ref.No	Part NO.	Description			
C001	1-123-356-00	ELECT	10MF	20%	16V
C002	1-161-025-00	CERAMIC	0.1MF	10%	25V
C003	1-161-025-00	CERAMIC	0.1MF	10%	25V
C004	1-161-025-00	CERAMIC	0.1MF	10%	25V
C006	1-161-025-00	CERAMIC	0.1MF	10%	25V
C007	1-123-332-00	ELECT	47MF	20%	16V
C008	1-161-025-00	CERAMIC	0.1MF	10%	25V
C010	1-123-306-00	ELECT	47MF	20%	10V
C011	1-123-306-00	ELECT	47MF	20%	10V
C012	1-161-025-00	CERAMIC	0.1MF	10%	25V
C013	1-123-306-00	ELECT	47MF	20%	6.3V
C015	1-161-025-00	CERAMIC	0.1MF	10%	25V
C016	1-102-519-00	CERAMIC	36PF	5%	50V
C017	1-123-332-00	ELECT	47MF	20%	16V
C018	1-161-025-00	CERAMIC	0.1MF	10%	25V
C020	1-161-025-00	CERAMIC	0.1MF	10%	25V
C021	1-161-025-00	CERAMIC	0.1MF	10%	25V
C023	1-123-356-00	ELECT	10MF	20%	16V
C025	1-102-973-00	CERAMIC	100PF	5%	50V
C026	1-101-884-00	CERAMIC	56PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description			Remark
C027	1-161-025-00	CERAMIC	0.1MF	10%	25V
C028	1-123-381-00	ELECT	2.2MF	20%	50V
C030	1-123-381-00	ELECT	2.2MF	20%	50V
C031	1-161-025-00	CERAMIC	0.1MF	10%	25V
C032	1-123-332-00	ELECT	47MF	20%	16V
C033	1-161-025-00	CERAMIC	0.1MF	10%	25V
C034	1-102-519-00	CERAMIC	36PF	5%	50V
C035	1-161-025-00	CERAMIC	0.1MF	10%	25V
C036	1-161-025-00	CERAMIC	0.1MF	10%	25V
C038	1-102-973-00	CERAMIC	100PF	5%	50V
C039	1-101-884-00	CERAMIC	56PF	5%	50V
C041	1-123-356-00	ELECT	10MF	20%	16V
C042	1-123-333-00	ELECT	100MF	20%	16V
C046	1-161-025-00	CERAMIC	0.1MF	10%	25V
C048	1-123-333-00	ELECT	100MF	20%	16V
C050	1-123-332-00	ELECT	47MF	20%	16V
C054	1-102-822-00	CERAMIC	390PF	5%	50V
C055	1-161-025-00	CERAMIC	0.1MF	10%	25V
C057	1-102-973-00	CERAMIC	100PF	5%	50V
C058	1-101-884-00	CERAMIC	56PF	5%	50V
C059	1-123-356-00	ELECT	10MF	20%	16V
C060	1-123-381-00	ELECT	2.2MF	20%	50V
C062	1-123-381-00	ELECT	2.2MF	20%	50V
C063	1-161-025-00	CERAMIC	0.1MF	10%	25V
C065	1-123-332-00	ELECT	47MF	20%	16V
C069	1-161-025-00	CERAMIC	0.1MF	10%	25V
C072	1-102-822-00	CERAMIC	390PF	5%	50V
C073	1-161-025-00	CERAMIC	0.1MF	10%	25V
C075	1-102-973-00	CERAMIC	100PF	5%	50V
C076	1-101-884-00	CERAMIC	56PF	5%	50V
C078	1-123-333-00	ELECT	100MF	20%	16V
C080	1-161-025-00	CERAMIC	0.1MF	10%	25V
C081	1-106-178-00	MYLAR	0.0018MF	5%	50V
C082	1-106-182-00	MYLAR	0.0027MF	5%	50V
C083	1-106-186-00	MYLAR	0.0039MF	5%	50V
C084	1-123-356-00	ELECT	10MF	20%	16V
C086	1-123-307-00	ELECT	100MF	20%	10V
C087	1-161-013-00	CERAMIC	0.01MF	10%	25V
C088	1-123-307-00	ELECT	100MF	20%	10V
C089	1-123-332-00	ELECT	47MF	20%	16V
C090	1-123-332-00	ELECT	47MF	20%	16V
C091	1-123-356-00	ELECT	10MF	20%	16V
C092	1-102-958-00	CERAMIC	20PF	5%	50V
C093	1-130-485-00	MYLAR	0.015MF	5%	50V
C095	1-130-485-00	MYLAR	0.015MF	5%	50V
C096	1-130-494-11	MYLAR	0.082MF	5%	50V
C098	1-130-475-00	MYLAR	0.0022MF	5%	50V
C099	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C100	1-130-469-00	MYLAR	680PF	5%	50V
C101	1-108-590-00	MYLAR	0.03MF	5%	50V
C102	1-131-383-00	TANTALUM	10MF	10%	6.3V
C103	1-131-347-00	TANTALUM	1MF	20%	16V
C105	1-123-307-00	ELECT	100MF	20%	10V
C106	1-161-013-00	CERAMIC	0.01MF	10%	25V
C107	1-130-497-00	MYLAR	0.15MF	5%	50V
C109	1-106-186-00	MYLAR	0.0039MF	5%	50V
C110	1-106-182-00	MYLAR	0.0027MF	5%	50V
C111	1-106-178-00	MYLAR	0.0018MF	5%	50V
C115	1-123-356-00	ELECT	10MF	20%	16V
C116	1-123-307-00	ELECT	100MF	20%	10V
C117	1-123-332-00	ELECT	47MF	20%	16V
C118	1-123-332-00	ELECT	47MF	20%	16V
C119	1-102-958-00	CERAMIC	20PF	5%	50V
C120	1-130-485-00	MYLAR	0.015MF	5%	50V
C121	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C122	1-130-469-00	MYLAR	680PF	5%	50V
C123	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C124	1-130-497-00	MYLAR	0.15MF	5%	50V
C125	1-131-383-00	TANTALUM	10MF	10%	6.3V
C126	1-131-347-00	TANTALUM	1MF	20%	16V
C127	1-108-590-00	MYLAR	0.03MF	5%	50V
C128	1-130-475-00	MYLAR	0.0022MF	5%	50V
C130	1-130-494-11	MYLAR	0.082MF	5%	50V
C131	1-130-485-00	MYLAR	0.015MF	5%	50V
C132	1-123-356-00	ELECT	10MF	20%	16V
C133	1-161-013-00	CERAMIC	0.01MF	10%	25V
C134	1-123-330-00	ELECT	22MF	20%	16V
C143	1-123-332-00	ELECT	47MF	20%	16V
C144	1-123-330-00	ELECT	22MF	20%	16V
C146	1-123-332-00	ELECT	47MF	20%	16V
C147	1-123-330-00	ELECT	22MF	20%	16V
C150	1-123-332-00	ELECT	47MF	20%	16V
C151	1-123-381-00	ELECT	2.2MF	20%	50V
C152	1-102-973-00	CERAMIC	100PF	5%	50V
C153	1-123-332-00	ELECT	47MF	20%	16V
C154	1-123-381-00	ELECT	2.2MF	20%	50V
C155	1-102-973-00	CERAMIC	100PF	5%	50V
C156	1-123-330-00	ELECT	22MF	20%	16V
C157	1-123-330-00	ELECT	22MF	20%	16V
C158	1-123-330-00	ELECT	22MF	20%	16V
C159	1-123-318-00	ELECT	33MF	20%	16V
C160	1-123-332-00	ELECT	47MF	20%	16V
C161	1-123-330-00	ELECT	22MF	20%	16V
C162	1-123-318-00	ELECT	33MF	20%	16V
C163	1-123-356-00	ELECT	10MF	20%	16V
C164	1-123-356-00	ELECT	10MF	20%	16V
C165	1-123-330-00	ELECT	22MF	20%	16V
C166	1-123-356-00	ELECT	10MF	20%	16V
C167	1-123-380-00	ELECT	1MF	20%	50V
C168	1-123-356-00	ELECT	10MF	20%	16V
C169	1-123-330-00	ELECT	22MF	20%	16V
C170	1-123-380-00	ELECT	1MF	20%	50V
C171	1-161-025-00	CERAMIC	0.1MF	10%	25V
C173	1-161-013-00	CERAMIC	0.01MF	10%	25V
C175	1-123-332-00	ELECT	47MF	20%	16V
C176	1-102-976-00	CERAMIC	180PF	5%	50V

When indicating parts by reference number, please include the board name.

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Ref.No	Part NO.	Description			Remark
C177	1-161-013-00	CERAMIC	0.01MF	10%	25V
C178	1-102-522-00	CERAMIC	51PF	5%	50V
C179	1-102-978-00	CERAMIC	220PF	5%	50V
C180	1-102-978-00	CERAMIC	220PF	5%	50V
C181	1-161-013-00	CERAMIC	0.01MF	10%	25V
C182	1-123-332-00	ELECT	47MF	20%	16V
C183	1-123-332-00	ELECT	47MF	20%	16V
C184	1-102-529-00	CERAMIC	100PF	5%	50V
C185	1-123-332-00	ELECT	47MF	20%	16V
C186	1-123-332-00	ELECT	47MF	20%	16V
C187	1-161-025-00	CERAMIC	0.1MF	10%	25V
C189	1-161-025-00	CERAMIC	0.1MF	10%	25V
C190	1-123-332-00	ELECT	47MF	20%	16V
C191	1-161-025-00	CERAMIC	0.1MF	10%	25V
C192	1-123-332-00	ELECT	47MF	20%	16V
C193	1-102-529-00	CERAMIC	100PF	5%	50V
C194	1-123-332-00	ELECT	47MF	20%	16V
C195	1-123-332-00	ELECT	47MF	20%	16V
C196	1-123-332-00	ELECT	47MF	20%	16V
C197	1-102-625-61	CERAMIC	100PF	5%	50V
C198	1-161-013-00	CERAMIC	0.01MF	10%	25V
C199	1-102-517-00	CERAMIC	30PF	5%	50V
C200	1-102-531-00	CERAMIC	150PF	5%	50V
C201	1-102-531-00	CERAMIC	150PF	5%	50V
C202	1-161-013-00	CERAMIC	0.01MF	10%	25V
C203	1-161-013-00	CERAMIC	0.01MF	10%	25V
C209	1-123-356-00	ELECT	10MF	20%	16V
C211	1-161-025-00	CERAMIC	0.1MF	10%	25V
C213	1-123-332-00	ELECT	47MF	20%	16V
C216	1-123-381-00	ELECT	2.2MF	20%	50V
C217	1-123-381-00	ELECT	2.2MF	20%	50V
C221	1-123-330-00	ELECT	22MF	20%	16V
C222	1-123-330-00	ELECT	22MF	20%	16V
C223	1-102-936-00	CERAMIC	3PF	0.25PF	50V
C224	1-123-380-00	ELECT	1MF	20%	50V
C225	1-161-013-00	CERAMIC	0.01MF	10%	25V
C226	1-161-013-00	CERAMIC	0.01MF	10%	25V
C227	1-161-013-00	CERAMIC	0.01MF	10%	25V
C229	1-130-471-00	MYLAR	0.001MF	5%	50V
C232	1-130-471-00	MYLAR	0.001MF	5%	50V
C235	1-161-013-00	CERAMIC	0.01MF	10%	25V
C236	1-130-491-00	MYLAR	0.047MF	5%	50V
C237	1-130-491-00	MYLAR	0.047MF	5%	50V
C238	1-123-330-00	ELECT	22MF	20%	16V
C240	1-161-025-00	CERAMIC	0.1MF	10%	25V
C241	1-123-356-00	ELECT	10MF	20%	16V
C501	1-124-233-00	ELECT	10MF	20%	16V
C701	1-123-356-00	ELECT	10MF	20%	16V
C702	1-123-356-00	ELECT	10MF	20%	16V
C704	1-123-322-00	ELECT	330MF	20%	16V
C706	1-124-231-00	ELECT	4.7MF	20%	16V
C709	1-123-381-00	ELECT	2.2MF	20%	50V
C710	1-130-469-00	MYLAR	680PF	5%	50V

Ref.No	Part NO.	Description			Remark
C711	1-130-469-00	MYLAR	680PF	5%	50V
C712	1-123-332-00	ELECT	47MF	20%	16V
C713	1-123-332-00	ELECT	47MF	20%	16V
C714	1-130-469-00	MYLAR	680PF	5%	50V
C715	1-130-469-00	MYLAR	680PF	5%	50V
C722	1-124-231-00	ELECT	4.7MF	20%	16V
C724	1-123-380-00	ELECT	1MF	20%	50V
C726	1-161-039-00	CERAMIC	0.001MF	10%	25V
C728	1-102-980-00	CERAMIC	270PF	5%	50V
C731	1-123-332-00	ELECT	47MF	20%	16V
C732	1-123-332-00	ELECT	47MF	20%	16V
C733	1-161-013-00	CERAMIC	0.01MF	10%	25V
C734	1-123-333-00	ELECT	100MF	20%	16V
C735	1-123-381-00	ELECT	2.2MF	20%	50V
C736	1-123-381-00	ELECT	2.2MF	20%	50V
C738	1-124-233-00	ELECT	10MF	20%	16V
C739	1-161-057-00	CERAMIC	0.033MF	10%	25V
C741	1-124-475-11	ELECT	470MF	20%	16V
C742	1-123-380-00	ELECT	1MF	20%	50V
C743	1-123-380-00	ELECT	1MF	20%	50V
C750	1-102-973-00	CERAMIC	100PF	5%	50V
C751	1-161-013-00	CERAMIC	0.01MF	10%	25V
C752	1-161-013-00	CERAMIC	0.01MF	10%	25V
C753	1-161-025-00	CERAMIC	0.1MF	10%	25V
C754	1-161-025-00	CERAMIC	0.1MF	10%	25V
C755	1-130-483-00	MYLAR	0.01MF	5%	50V
C756	1-130-475-00	MYLAR	0.0022MF	5%	50V
C757	1-130-495-00	MYLAR	0.1MF	5%	50V
C758	1-161-057-00	CERAMIC	0.033MF	10%	25V
C759	1-161-025-00	CERAMIC	0.1MF	10%	25V
C760	1-161-025-00	CERAMIC	0.1MF	10%	25V
C850	1-123-330-00	ELECT	22MF	20%	16V

CONNECTOR

Ref.No	Part NO.	Description
CN003♠:	1-560-892-00	PIN, CONNECTOR 4P
CN004♠:	1-560-892-00	PIN, CONNECTOR 4P
CN008♠:	1-560-897-00	PIN, CONNECTOR 9P
CN011♠:	1-560-900-00	PIN, CONNECTOR 12P
CN012♠:	1-560-890-00	PIN, CONNECTOR 2P

DIODE

Ref.No	Part NO.	Description
D007	8-719-911-19	DIODE 1SS119
D008	8-719-911-19	DIODE 1SS119
D011	8-719-000-12	DIODE MC931
D013	8-719-000-12	DIODE MC931
D017	=>8-719-911-19	DIODE 1SS119
D019	=>8-719-911-19	DIODE 1SS119
D025	8-719-100-34	DIODE RD5.6E-B1
D027	=>8-719-911-19	DIODE 1SS119
D504	8-719-911-19	DIODE 1SS119
D505	8-719-156-07	DIODE RD5.6E-B
D508	8-719-162-07	DIODE RD6.2E-B
D509	8-719-812-33	DIODE TLG123A

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
D510	8-719-812-33	DIODE TLG123A	
D511	8-719-812-33	DIODE TLG123A	
D512	8-719-812-33	DIODE TLG123A	
D514	8-719-911-19	DIODE 1SS119	
D515	8-719-911-19	DIODE 1SS119	
D516	8-719-911-19	DIODE 1SS119	
D517	8-719-911-19	DIODE 1SS119	
D521	8-719-911-19	DIODE 1SS119	
D522	8-719-911-19	DIODE 1SS119	
D523	8-719-911-19	DIODE 1SS119	
D524	8-719-812-33	DIODE TLG123A	
D525	8-719-175-07	DIODE RD7.5E-B	
D526	8-719-175-07	DIODE RD7.5E-B	
D527	8-719-911-19	DIODE 1SS119	
D528	8-719-911-19	DIODE 1SS119	
D529	8-719-911-19	DIODE 1SS119	
D530	8-719-911-19	DIODE 1SS119	
D531	8-719-911-19	DIODE 1SS119	
D532	8-719-911-19	DIODE 1SS119	
D850	8-719-911-19	DIODE 1SS119	

IC

Ref.No	Part NO.	Description	Remark
IC001	8-759-324-12	IC HA12412	
IC002	8-759-324-12	IC HA12412	
IC003	8-759-101-67	IC UPC1167C2	
IC004	8-759-101-67	IC UPC1167C2	
IC005	8-759-103-93	IC UPC393C	
IC006	8-759-990-82	IC TL082CP	
IC007	8-759-990-82	IC TL082CP	
IC008	8-759-240-66	IC TC4066BP	
IC009	8-759-240-66	IC TC4066BP	
IC010	8-759-400-04	IC AN6120	
IC011	8-759-400-04	IC AN6120	
IC012	8-752-009-70	IC CX20097	
IC013	8-759-700-62	IC NJM4562D	
IC014	8-759-240-52	IC TC4052BP	
IC015	8-759-700-62	IC NJM4562D	
IC016	8-752-006-10	IC CX20061	
IC017	8-752-006-10	IC CX20061	
IC018	8-759-240-93	IC TC4093BP	
IC019	8-759-240-01	IC TC4001BP	
IC020	8-759-913-02	IC MB88201-167G	
IC021	8-752-006-10	IC CX20061	
IC022	8-752-006-10	IC CX20061	

COIL

Ref.No	Part NO.	Description	Remark
L001	1-408-421-00	MICRO INDUCTOR 100UH	
L002	1-408-413-00	MICRO INDUCTOR 22UH	
L003	1-407-163-XX	MICRO INDUCTOR 33UH	
L004	1-407-163-XX	MICRO INDUCTOR 33UH	
L005	1-407-163-XX	MICRO INDUCTOR 33UH	
L007	1-408-415-00	MICRO INDUCTOR 33UH	
L008	1-408-418-00	MICRO INDUCTOR 56UH	
L010	1-408-413-00	MICRO INDUCTOR 22UH	
L011	1-408-416-00	MICRO INDUCTOR 39UH	
L012	1-407-163-XX	MICRO INDUCTOR 33UH	
L013	1-408-413-00	MICRO INDUCTOR 22UH	
L014	1-408-413-00	MICRO INDUCTOR 22UH	
L015	1-408-413-00	MICRO INDUCTOR 22UH	
L016	1-408-413-00	MICRO INDUCTOR 22UH	
L020	1-408-417-00	MICRO INDUCTOR 47UH	
L021	1-408-417-00	MICRO INDUCTOR 47UH	
L022	1-408-417-00	MICRO INDUCTOR 47UH	
L026	1-408-421-00	MICRO INDUCTOR 100UH	
L027	1-408-421-00	MICRO INDUCTOR 100UH	
L028	1-408-429-00	MICRO INDUCTOR 470UH	

L.P.F

Ref.No	Part NO.	Description	Remark
LPF001	1-235-365-11	L.P.F	
LPF002	1-235-365-11	L.P.F	

IC LINK

Ref.No	Part NO.	Description	Remark
PS001	⚠1-532-605-11	LINK, IC ICP-N10	

TRANSISTOR

Ref.No	Part NO.	Description	Remark
Q001	⚠8-729-113-33	TRANSISTOR 2SB733-4	
Q002	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	8-729-177-42	TRANSISTOR 2SD774	
Q008	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q009	8-729-603-30	TRANSISTOR 2SC403SP-3	
Q010	8-729-106-07	TRANSISTOR 2SK514-H	
Q012	8-729-965-22	TRANSISTOR 2SC1652	
Q015	8-729-106-07	TRANSISTOR 2SK514-H	
Q017	=>8-729-245-83	TRANSISTOR 2SC2458	
Q019	=>8-729-245-83	TRANSISTOR 2SC2458	
Q020	=>8-729-245-83	TRANSISTOR 2SC2458	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458	
Q024	=>8-729-245-83	TRANSISTOR 2SC2458	
Q030	=>8-729-245-83	TRANSISTOR 2SC2458	
Q031	=>8-729-245-83	TRANSISTOR 2SC2458	
Q032	8-729-965-22	TRANSISTOR 2SC1652	
Q034	8-729-965-22	TRANSISTOR 2SC1652	
Q035	8-729-965-22	TRANSISTOR 2SC1652	
Q036	8-729-965-22	TRANSISTOR 2SC1652	
Q037	=>8-729-245-83	TRANSISTOR 2SC2458	
Q038	=>8-729-245-83	TRANSISTOR 2SC2458	
Q044	8-729-965-22	TRANSISTOR 2SC1652-Q	
Q046	=>8-729-245-83	TRANSISTOR 2SC2458	
Q049	8-729-900-89	TRANSISTOR DTC144ES	
Q701	=>8-729-245-83	TRANSISTOR 2SC2458	
Q703	=>8-729-245-83	TRANSISTOR 2SC2458	

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

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Ref.No	Part NO.	Description	Remark
Q704	=>8-729-245-83	TRANSISTOR 2SC2458	
Q705	=>8-729-245-83	TRANSISTOR 2SC2458	
Q706	8-729-965-22	TRANSISTOR 2SC1652	
Q707	8-729-993-72	TRANSISTOR 2SA937-R	
Q708	=>8-729-245-83	TRANSISTOR 2SC2458	
Q709	8-729-117-54	TRANSISTOR 2SA1175	
Q710	8-729-117-54	TRANSISTOR 2SA1175	
Q715	=>8-729-245-83	TRANSISTOR 2SC2458	
Q716	=>8-729-245-83	TRANSISTOR 2SC2458	
Q720	8-729-117-54	TRANSISTOR 2SA1175	
Q721	=>8-729-245-83	TRANSISTOR 2SC2458	
Q722	=>8-729-245-83	TRANSISTOR 2SC2458	
Q723	8-729-900-33	TRANSISTOR DTC144EF	
Q724	=>8-729-245-83	TRANSISTOR 2SC2458	
Q725	8-729-117-54	TRANSISTOR 2SA1175	
Q728	=>8-729-245-83	TRANSISTOR 2SC2458	
Q729	=>8-729-245-83	TRANSISTOR 2SC2458	
Q850	8-729-900-89	TRANSISTOR DTC144ES	
Q851	8-729-900-89	TRANSISTOR DTC144ES	
Q852	8-729-900-89	TRANSISTOR DTC144ES	
Q853	8-729-900-89	TRANSISTOR DTC144ES	

RESISTOR

Ref.No	Part NO.	Description				Remark
R001	1-247-807-00	CARBON	100	5%	1/6W	
R002	1-247-847-00	CARBON	4.7K	5%	1/6W	
R003	1-247-831-00	CARBON	1K	5%	1/6W	
R004	1-247-867-00	CARBON	33K	5%	1/6W	
R005	1-247-861-00	CARBON	18K	5%	1/6W	
R006	1-247-823-00	CARBON	470	5%	1/6W	
R007	1-247-873-00	CARBON	56K	5%	1/6W	
R008	1-247-855-00	CARBON	10K	5%	1/6W	
R012	1-247-855-00	CARBON	10K	5%	1/6W	
R013	1-247-855-00	CARBON	10K	5%	1/6W	
R014	1-247-855-00	CARBON	10K	5%	1/6W	
R026	1-247-823-00	CARBON	470	5%	1/6W	
R027	1-247-861-00	CARBON	18K	5%	1/6W	
R028	1-247-831-00	CARBON	1K	5%	1/6W	
R029	1-247-825-00	CARBON	560	5%	1/6W	
R030	1-247-815-00	CARBON	220	5%	1/6W	
R031	1-247-822-00	CARBON	430	5%	1/6W	
R033	1-247-809-00	CARBON	120	5%	1/6W	
R034	1-247-819-00	CARBON	330	5%	1/6W	
R035 ⚠	1-212-853-00	FUSIBLE	6.8	5%	1/4W	F
R036	1-247-855-00	CARBON	10K	5%	1/6W	
R037	1-247-823-00	CARBON	470	5%	1/6W	
R038	1-247-855-00	CARBON	10K	5%	1/6W	
R039	1-247-855-00	CARBON	10K	5%	1/6W	
R040	1-247-855-00	CARBON	10K	5%	1/6W	
R042	1-247-855-00	CARBON	10K	5%	1/6W	
R043	1-247-855-00	CARBON	10K	5%	1/6W	
R044	1-247-823-00	CARBON	470	5%	1/6W	
R045	1-247-861-00	CARBON	18K	5%	1/6W	
R046	1-247-831-00	CARBON	1K	5%	1/6W	

Ref.No	Part NO.	Description				Remark
R047	1-247-825-00	CARBON	560	5%	1/6W	
R048	1-247-847-00	CARBON	4.7K	5%	1/6W	
R049	1-247-815-00	CARBON	220	5%	1/6W	
R050	1-247-822-00	CARBON	430	5%	1/6W	
R052	1-247-809-00	CARBON	120	5%	1/6W	
R054	1-247-855-00	CARBON	10K	5%	1/6W	
R055	1-247-855-00	CARBON	10K	5%	1/6W	
R056	1-247-855-00	CARBON	10K	5%	1/6W	
R057	1-247-855-00	CARBON	10K	5%	1/6W	
R061	1-247-831-00	CARBON	1K	5%	1/6W	
R069	1-247-839-00	CARBON	2.2K	5%	1/6W	
R071	1-247-855-00	CARBON	10K	5%	1/6W	
R072	1-247-879-00	CARBON	100K	5%	1/6W	
R073	1-247-851-00	CARBON	6.8K	5%	1/6W	
R074	1-247-867-00	CARBON	33K	5%	1/6W	
R083	1-247-822-00	CARBON	430	5%	1/6W	
R085	1-247-814-00	CARBON	200	5%	1/6W	
R087	1-247-855-00	CARBON	10K	5%	1/6W	
R088	1-247-855-00	CARBON	10K	5%	1/6W	
R089	1-247-855-00	CARBON	10K	5%	1/6W	
R090	1-247-823-00	CARBON	470	5%	1/6W	
R091	1-247-855-00	CARBON	10K	5%	1/6W	
R093	1-247-831-00	CARBON	1K	5%	1/6W	
R099	1-247-838-00	CARBON	2K	5%	1/6W	
R105	1-247-839-00	CARBON	2.2K	5%	1/6W	
R110	1-247-839-00	CARBON	2.2K	5%	1/6W	
R111	1-247-855-00	CARBON	10K	5%	1/6W	
R112	1-247-855-00	CARBON	10K	5%	1/6W	
R115	1-247-822-00	CARBON	430	5%	1/6W	
R116	1-247-814-00	CARBON	200	5%	1/6W	
R117	1-247-855-00	CARBON	10K	5%	1/6W	
R118	1-247-855-00	CARBON	10K	5%	1/6W	
R119	1-247-855-00	CARBON	10K	5%	1/6W	
R120	1-247-855-00	CARBON	10K	5%	1/6W	
R122	1-247-848-00	CARBON	5.1K	5%	1/6W	
R123	1-247-863-00	CARBON	22K	5%	1/6W	
R124	1-247-863-00	CARBON	22K	5%	1/6W	
R125	1-247-863-00	CARBON	22K	5%	1/6W	
R126	1-247-839-00	CARBON	2.2K	5%	1/6W	
R127	1-247-863-00	CARBON	22K	5%	1/6W	
R128	1-247-863-00	CARBON	22K	5%	1/6W	
R129	1-247-863-00	CARBON	22K	5%	1/6W	
R130	1-247-839-00	CARBON	2.2K	5%	1/6W	
R132	1-247-855-00	CARBON	10K	5%	1/6W	
R133	1-247-859-00	CARBON	15K	5%	1/6W	
R134	1-247-840-00	CARBON	2.4K	5%	1/6W	
R135	1-215-414-00	METAL	510	1%	1/6W	
R136	1-215-445-00	METAL	10K	1%	1/6W	
R137	1-215-445-00	METAL	10K	1%	1/6W	
R138	1-215-412-00	METAL	430	1%	1/6W	
R139	1-215-432-00	METAL	3K	1%	1/6W	
R140	1-215-448-00	METAL	13K	1%	1/6W	
R141	1-215-448-00	METAL	13K	1%	1/6W	

NOTE:

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When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description			Remark
R142	1-215-428-00	METAL	2K	1% 1/6W	
R143	1-215-432-00	METAL	3K	1% 1/6W	
R146	1-215-443-00	METAL	8.2K	1% 1/6W	
R147	1-215-455-00	METAL	27K	1% 1/6W	
R148	1-215-438-00	METAL	5.1K	1% 1/6W	
R149	1-215-418-00	METAL	750	1% 1/6W	
R150	1-215-404-00	METAL	200	1% 1/6W	
R151	1-247-851-00	CARBON	6.8K	5% 1/6W	
R152	1-247-847-00	CARBON	4.7K	5% 1/6W	
R157	1-247-855-00	CARBON	10K	5% 1/6W	
R158	1-247-859-00	CARBON	15K	5% 1/6W	
R159	1-247-840-00	CARBON	2.4K	5% 1/6W	
R160	1-215-414-00	METAL	510	1% 1/6W	
R161	1-215-445-00	METAL	10K	1% 1/6W	
R162	1-215-433-00	METAL	3.3K	1% 1/6W	
R163	1-215-445-00	METAL	10K	1% 1/6W	
R164	1-215-445-00	METAL	10K	1% 1/6W	
R165	1-215-432-00	METAL	3K	1% 1/6W	
R166	1-215-412-00	METAL	430	1% 1/6W	
R167	1-215-448-00	METAL	13K	1% 1/6W	
R168	1-215-428-00	METAL	2K	1% 1/6W	
R169	1-215-448-00	METAL	13K	1% 1/6W	
R170	1-215-432-00	METAL	3K	1% 1/6W	
R172	1-215-455-00	METAL	27K	1% 1/6W	
R174	1-215-443-00	METAL	8.2K	1% 1/6W	
R175	1-247-836-00	CARBON	1.6K	5% 1/6W	
R176	1-215-404-00	METAL	200	1% 1/6W	
R177	1-215-438-00	METAL	5.1K	1% 1/6W	
R178	1-215-418-00	METAL	750	1% 1/6W	
R179	⚠ 1-247-815-00	CARBON	220	5% 1/6W	
R180	1-215-465-00	METAL	68K	1% 1/6W	
R181	1-215-446-00	METAL	11K	1% 1/6W	
R183	1-215-462-00	METAL	51K	1% 1/6W	
R184	1-215-462-00	METAL	51K	1% 1/6W	
R185	1-247-871-00	CARBON	47K	5% 1/6W	
R190	1-215-446-00	METAL	11K	1% 1/6W	
R191	1-215-465-00	METAL	68K	1% 1/6W	
R194	1-247-872-00	CARBON	51K	5% 1/6W	
R200	1-247-872-00	CARBON	51K	5% 1/6W	
R205	1-247-855-00	CARBON	10K	5% 1/6W	
R206	1-247-859-00	CARBON	15K	5% 1/6W	
R217	⚠ 1-247-815-00	CARBON	220	5% 1/6W	
R218	1-247-871-00	CARBON	47K	5% 1/6W	
R220	1-247-875-00	CARBON	68K	5% 1/6W	
R221	1-247-850-00	CARBON	6.2K	5% 1/6W	
R222	1-247-863-00	CARBON	22K	5% 1/6W	
R223	1-247-831-00	CARBON	1K	5% 1/6W	
R224	1-247-887-00	CARBON	220K	5% 1/6W	
R225	1-247-842-00	CARBON	3K	5% 1/6W	
R226	1-247-879-00	CARBON	100K	5% 1/6W	
R227	1-247-855-00	CARBON	10K	5% 1/6W	

Ref.No	Part NO.	Description			Remark
R228	1-247-879-00	CARBON	100K	5% 1/6W	
R229	1-247-831-00	CARBON	1K	5% 1/6W	
R230	1-247-887-00	CARBON	220K	5% 1/6W	
R231	1-247-842-00	CARBON	3K	5% 1/6W	
R232	1-247-848-00	CARBON	5.1K	5% 1/6W	
R233	1-247-848-00	CARBON	5.1K	5% 1/6W	
R234	⚠ 1-247-815-00	CARBON	220	5% 1/6W	
R235	1-247-871-00	CARBON	47K	5% 1/6W	
R236	1-247-871-00	CARBON	47K	5% 1/6W	
R237	1-247-839-00	CARBON	2.2K	5% 1/6W	
R239	1-247-863-00	CARBON	22K	5% 1/6W	
R240	1-247-871-00	CARBON	47K	5% 1/6W	
R241	1-247-875-00	CARBON	68K	5% 1/6W	
R243	1-247-850-00	CARBON	6.2K	5% 1/6W	
R244	1-247-855-00	CARBON	10K	5% 1/6W	
R245	1-247-855-00	CARBON	10K	5% 1/6W	
R246	1-247-855-00	CARBON	10K	5% 1/6W	
R247	1-247-855-00	CARBON	10K	5% 1/6W	
R248	1-247-863-00	CARBON	22K	5% 1/6W	
R249	1-247-855-00	CARBON	10K	5% 1/6W	
R253	1-247-855-00	CARBON	10K	5% 1/6W	
R255	1-247-867-00	CARBON	33K	5% 1/6W	
R256	1-247-863-00	CARBON	22K	5% 1/6W	
R262	1-247-851-00	CARBON	6.8K	5% 1/6W	
R263	1-247-823-00	CARBON	470	5% 1/6W	
R264	1-247-861-00	CARBON	18K	5% 1/6W	
R265	1-247-861-00	CARBON	18K	5% 1/6W	
R266	1-247-807-00	CARBON	100	5% 1/6W	
R267	1-215-442-00	METAL	7.5K	1% 1/6W	
R268	1-247-843-00	CARBON	3.3K	5% 1/6W	
R269	1-247-855-00	CARBON	10K	5% 1/6W	
R270	1-247-855-00	CARBON	10K	5% 1/6W	
R271	1-247-875-00	CARBON	68K	5% 1/6W	
R272	1-247-871-00	CARBON	47K	5% 1/6W	
R273	1-247-871-00	CARBON	47K	5% 1/6W	
R275	1-247-851-00	CARBON	6.8K	5% 1/6W	
R276	1-247-823-00	CARBON	470	5% 1/6W	
R277	1-247-861-00	CARBON	18K	5% 1/6W	
R278	1-247-861-00	CARBON	18K	5% 1/6W	
R279	1-247-807-00	CARBON	100	5% 1/6W	
R280	1-215-421-00	METAL	1K	1% 1/6W	
R281	1-247-844-00	CARBON	3.6K	5% 1/6W	
R282	1-247-855-00	CARBON	10K	5% 1/6W	
R283	1-247-855-00	CARBON	10K	5% 1/6W	
R284	1-247-869-00	CARBON	39K	5% 1/6W	
R285	1-247-871-00	CARBON	47K	5% 1/6W	
R286	1-247-871-00	CARBON	47K	5% 1/6W	
R288	1-215-453-00	METAL	22K	1% 1/6W	
R289	1-215-453-00	METAL	22K	1% 1/6W	
R290	1-247-807-00	CARBON	100	5% 1/6W	
R291	1-247-831-00	CARBON	1K	5% 1/6W	
R293	1-247-867-00	CARBON	33K	5% 1/6W	
R296	1-247-867-00	CARBON	33K	5% 1/6W	

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AF-3P

Ref.No	Part NO.	Description				Remark
R297	1-247-848-00	CARBON	5.1K	5%	1/6W	
R298	1-247-863-00	CARBON	22K	5%	1/6W	
R299	1-247-863-00	CARBON	22K	5%	1/6W	
R300	1-247-863-00	CARBON	22K	5%	1/6W	
R301	1-247-855-00	CARBON	10K	5%	1/6W	
R302	1-247-855-00	CARBON	10K	5%	1/6W	
R303	1-247-871-00	CARBON	47K	5%	1/6W	
R304	1-247-855-00	CARBON	10K	5%	1/6W	
R308	1-247-863-00	CARBON	22K	5%	1/6W	
R310	1-247-847-00	CARBON	4.7K	5%	1/6W	
R311	1-215-445-00	METAL	10K	1%	1/6W	
R312	1-215-433-00	METAL	3.3K	1%	1/6W	
R313	1-247-855-00	CARBON	10K	5%	1/6W	
R322	1-247-879-00	CARBON	100K	5%	1/6W	
R323	1-247-839-00	CARBON	2.2K	5%	1/6W	
R324	1-247-871-00	CARBON	47K	5%	1/6W	
R325	1-247-879-00	CARBON	100K	5%	1/6W	
R326	1-247-831-00	CARBON	1K	5%	1/6W	
R327	1-247-859-00	CARBON	15K	5%	1/6W	
R330	1-247-838-00	CARBON	2K	5%	1/6W	
R332	1-247-862-00	CARBON	20K	5%	1/6W	
R338	1-247-862-00	CARBON	20K	5%	1/6W	
R343	1-247-807-00	CARBON	100	5%	1/6W	
R344	1-247-807-00	CARBON	100	5%	1/6W	
R345	1-247-820-00	CARBON	360	5%	1/6W	
R346	1-247-820-00	CARBON	360	5%	1/6W	
R351	1-247-843-00	CARBON	3.3K	5%	1/6W	
R352	1-247-857-00	CARBON	12K	5%	1/6W	
R601	1-247-871-00	CARBON	47K	5%	1/6W	
R701	1-247-855-00	CARBON	10K	5%	1/6W	
R702	1-247-855-00	CARBON	10K	5%	1/6W	
R703	1-247-847-00	CARBON	4.7K	5%	1/6W	
R706	1-247-843-00	CARBON	3.3K	5%	1/6W	
R707	1-247-847-00	CARBON	4.7K	5%	1/6W	
R708	1-247-843-00	CARBON	3.3K	5%	1/6W	
R711	1-247-867-00	CARBON	33K	5%	1/6W	
R712	1-247-867-00	CARBON	33K	5%	1/6W	
R713	1-247-855-00	CARBON	10K	5%	1/6W	
R714	1-247-867-00	CARBON	33K	5%	1/6W	
R715	1-247-867-00	CARBON	33K	5%	1/6W	
R716	1-247-855-00	CARBON	10K	5%	1/6W	
R718	1-247-849-00	CARBON	5.6K	5%	1/6W	
R719	1-247-849-00	CARBON	5.6K	5%	1/6W	
R720	1-247-849-00	CARBON	5.6K	5%	1/6W	
R721	1-247-849-00	CARBON	5.6K	5%	1/6W	
R722	1-247-867-00	CARBON	33K	5%	1/6W	
R724	1-247-867-00	CARBON	33K	5%	1/6W	
R725	1-247-855-00	CARBON	10K	5%	1/6W	
R726	1-247-867-00	CARBON	33K	5%	1/6W	
R727	1-247-867-00	CARBON	33K	5%	1/6W	
R728	1-247-855-00	CARBON	10K	5%	1/6W	
R729	1-247-839-00	CARBON	2.2K	5%	1/6W	
R730	1-247-813-00	CARBON	180	5%	1/6W	

Ref.No	Part NO.	Description				Remark
R731	1-247-813-00	CARBON	180	5%	1/6W	
R732	1-247-867-00	CARBON	33K	5%	1/6W	
R734	1-247-812-00	CARBON	160	5%	1/6W	
R735	1-247-812-00	CARBON	160	5%	1/6W	
R736	1-247-867-00	CARBON	33K	5%	1/6W	
R737	1-247-821-00	CARBON	390	5%	1/6W	
R739	1-247-863-00	CARBON	22K	5%	1/6W	
R740	1-247-863-00	CARBON	22K	5%	1/6W	
R741	1-247-843-00	CARBON	3.3K	5%	1/6W	
R746	1-247-863-00	CARBON	22K	5%	1/6W	
R748	1-247-843-00	CARBON	3.3K	5%	1/6W	
R757	1-247-825-00	CARBON	560	5%	1/6W	
R759	1-247-823-00	CARBON	470	5%	1/6W	
R779	1-247-855-00	CARBON	10K	5%	1/6W	
R780	1-247-825-00	CARBON	560	5%	1/6W	
R781	1-247-825-00	CARBON	560	5%	1/6W	
R782	1-247-867-00	CARBON	33K	5%	1/6W	
R783	1-247-867-00	CARBON	33K	5%	1/6W	
R784	1-247-825-00	CARBON	560	5%	1/6W	
R785	1-247-825-00	CARBON	560	5%	1/6W	
R787	1-247-855-00	CARBON	10K	5%	1/6W	
R788 ⚠.	1-247-831-00	CARBON	1K	5%	1/6W	
R789	1-247-896-00	CARBON	510K	5%	1/6W	
R790	1-247-855-00	CARBON	10K	5%	1/6W	
R793	1-247-855-00	CARBON	10K	5%	1/6W	
R794	1-247-847-00	CARBON	4.7K	5%	1/6W	
R795	1-247-847-00	CARBON	4.7K	5%	1/6W	
R796	1-247-839-00	CARBON	2.2K	5%	1/6W	
R797	1-247-839-00	CARBON	2.2K	5%	1/6W	
R798	1-247-803-00	CARBON	68	5%	1/6W	
R799	1-247-831-00	CARBON	1K	5%	1/6W	
R800	1-247-831-00	CARBON	1K	5%	1/6W	
R801 ⚠.	1-247-815-00	CARBON	220	5%	1/6W	
R802 ⚠.	1-247-815-00	CARBON	220	5%	1/6W	
R803	1-247-875-00	CARBON	68K	5%	1/6W	
R804	1-247-879-00	CARBON	100K	5%	1/6W	
R805	1-247-879-00	CARBON	100K	5%	1/6W	
R806	1-247-855-00	CARBON	10K	5%	1/6W	
R807	1-247-815-00	CARBON	220	5%	1/6W	
R808	1-247-815-00	CARBON	220	5%	1/6W	
R810	1-247-873-00	CARBON	56K	5%	1/6W	
R811	1-247-855-00	CARBON	10K	5%	1/6W	
R812	1-247-855-00	CARBON	10K	5%	1/6W	
R815	1-247-855-00	CARBON	10K	5%	1/6W	
R816	1-247-895-00	CARBON	470K	5%	1/6W	
R817	1-247-879-00	CARBON	100K	5%	1/6W	
R818	1-247-895-00	CARBON	470K	5%	1/6W	
R819	1-247-895-00	CARBON	470K	5%	1/6W	
R820	1-247-895-00	CARBON	470K	5%	1/6W	
R821	1-247-895-00	CARBON	470K	5%	1/6W	
R828	1-247-887-00	CARBON	220K	5%	1/6W	
R829	1-247-823-00	CARBON	470	5%	1/6W	
R830	1-247-819-00	CARBON	330	5%	1/6W	

NOTE:

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Ref.No	Part NO.	Description				Remark
R831	1-247-831-00	CARBON	1K	5%	1/6W	
R832	1-247-871-00	CARBON	47K	5%	1/6W	
R833	1-247-867-00	CARBON	33K	5%	1/6W	
R834	1-247-848-00	CARBON	5.1K	5%	1/6W	
R835	1-247-847-00	CARBON	4.7K	5%	1/6W	
R836	1-247-855-00	CARBON	10K	5%	1/6W	
R837	1-247-855-00	CARBON	10K	5%	1/6W	
R838	1-247-831-00	CARBON	1K	5%	1/6W	
R839	1-247-831-00	CARBON	1K	5%	1/6W	
R840	1-247-831-00	CARBON	1K	5%	1/6W	
R841	1-247-831-00	CARBON	1K	5%	1/6W	
R844	1-247-855-00	CARBON	10K	5%	1/6W	
R845	1-247-819-00	CARBON	330	5%	1/6W	
R846	1-247-829-00	CARBON	820	5%	1/6W	
R850	1-247-855-00	CARBON	10K	5%	1/6W	
R851	1-247-873-00	CARBON	56K	5%	1/6W	
R852	1-247-855-00	CARBON	10K	5%	1/6W	
R853	1-247-855-00	CARBON	10K	5%	1/6W	
R854	1-247-855-00	CARBON	10K	5%	1/6W	
R855	1-247-855-00	CARBON	10K	5%	1/6W	

VARIABLE RESISTOR

Ref.No	Part NO.	Description
RV005	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV006	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV010	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV012	1-228-996-00	RES, ADJ, METAL GLAZE 47K
RV013	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K
RV014	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV015	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV016	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV017	1-228-991-00	RES, ADJ, METAL GLAZE 2.2K
RV018	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K
RV019	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K
RV020	1-228-997-00	RES, ADJ, METAL GLAZE 100K
RV021	1-228-997-00	RES, ADJ, METAL GLAZE 100K
RV022	1-228-997-00	RES, ADJ, METAL GLAZE 100K
RV023	1-228-997-00	RES, ADJ, METAL GLAZE 100K

TRANSFORMER

Ref.No	Part NO.	Description
T002	1-404-545-11	COIL, Q DET
T004	1-404-545-11	COIL, Q DET
T006	1-404-544-11	COIL, Q DET
T008	1-404-544-11	COIL, Q DET

* * *

Part NO.	Description
♠:A-6715-235-A	SS-29 BOARD, COMPLETE
1-533-162-00	HOLDER, FUSE
1-535-541-11	WIRE, JUMPER (41 CORE)
1-535-542-11	WIRE, JUMPER (41 CORE)
♠:3-655-214-00	CLIP, CABLE
♠:3-671-836-00	LID, SS-10 SHIELD CASE
♠:3-671-839-00	CASE (MAIN), SHIELD, SS-10
♠:X-3670-042-0	LID ASSY, REAR, SHIELD CASE

Ref.No	Part NO.	Description	Remark
	7-685-862-01	SCREW (2.6XN02)	
	7-612-206-99	WIRE, HEAT-RESISTING VINYL(41)	
	7-632-396-09	TUBE, SILICON GLASS (7.0)(WHT)	

CAPACITOR

Ref.No	Part NO.	Description				Remark
C001	1-123-820-00	ELECT	33MF	20%	16V	
C002	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C003	1-123-617-00	ELECT	10MF	20%	16V	
C004	1-123-617-00	ELECT	10MF	20%	16V	
C005	1-161-039-00	CERAMIC	0.001MF	10%	25V	
C006	1-123-333-00	ELECT	100MF	20%	16V	
C007	1-123-820-00	ELECT	33MF	20%	16V	
C008	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C009	1-130-482-00	MYLAR	0.0082MF	5%	50V	
C010	1-130-482-00	MYLAR	0.0082MF	5%	50V	
C011	1-123-612-00	ELECT	2.2MF	20%	50V	
C012	1-123-612-00	ELECT	2.2MF	20%	50V	
C013	1-123-611-00	ELECT	1MF	20%	50V	
C014	1-123-611-00	ELECT	1MF	20%	50V	
C015	1-123-611-00	ELECT	1MF	20%	50V	
C016	1-123-611-00	ELECT	1MF	20%	50V	
C017	1-123-617-00	ELECT	10MF	20%	16V	
C018	1-123-820-00	ELECT	33MF	20%	16V	
C019	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C020	1-123-820-00	ELECT	33MF	20%	16V	
C021	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C022	1-123-611-00	ELECT	1MF	20%	50V	
C023	1-123-611-00	ELECT	1MF	20%	50V	
C024	1-161-047-00	CERAMIC	0.0047MF	10%	25V	
C026	1-161-039-00	CERAMIC	0.001MF	10%	25V	
C028	1-123-611-00	ELECT	1MF	20%	50V	
C029	1-123-613-00	ELECT	3.3MF	20%	50V	
C030	1-123-820-00	ELECT	33MF	20%	16V	
C031	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C032	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C033	1-123-820-00	ELECT	33MF	20%	16V	
C034	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C035	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C036	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C037	1-161-043-00	CERAMIC	0.0022MF	10%	25V	
C038	1-123-616-00	ELECT	4.7MF	20%	25V	
C039	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C040	1-161-057-00	CERAMIC	0.033MF	10%	25V	
C041	1-123-611-00	ELECT	1MF	20%	50V	
C044	1-161-043-00	CERAMIC	0.0022MF	10%	25V	
C045	1-161-043-00	CERAMIC	0.0022MF	10%	25V	
C301	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C302	1-130-491-00	MYLAR	0.047MF	5%	50V	
C303	1-130-491-00	MYLAR	0.047MF	5%	50V	
C304	1-123-613-00	ELECT	3.3MF	20%	50V	
C305	1-123-613-00	ELECT	3.3MF	20%	50V	
C306	1-123-613-00	ELECT	3.3MF	20%	50V	
C307	1-130-483-00	MYLAR	0.01MF	5%	50V	

When indicating parts by reference number, please include the board name.

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Ref.No	Part NO.	Description			Remark
C308	1-161-013-00	CERAMIC	0.01MF	10%	25V
C309	1-130-481-00	MYLAR	0.0068MF	5%	50V
C310	1-123-298-00	ELECT	470MF	20%	6.3V
C311	1-161-059-00	CERAMIC	0.047MF	10%	25V
C312	1-161-055-00	CERAMIC	0.022MF	10%	25V
C317	1-123-611-00	ELECT	1MF	20%	50V
C318	1-123-617-00	ELECT	10MF	20%	16V
C319	1-123-333-00	ELECT	100MF	20%	16V
C321	1-123-820-00	ELECT	33MF	20%	16V
C322	1-123-820-00	ELECT	33MF	20%	16V
C323	1-161-059-00	CERAMIC	0.047MF	10%	25V
C324	1-123-616-00	ELECT	4.7MF	20%	25V
C325	1-130-483-00	MYLAR	0.01MF	5%	50V
C326	1-123-822-00	ELECT	47MF	20%	10V
C327	1-123-612-00	ELECT	2.2MF	20%	50V
C328	1-131-345-00	ELECT(SOLID)	0.47MF	10%	25V
C330	1-123-617-00	ELECT	10MF	20%	16V
C331	1-161-055-00	CERAMIC	0.022MF	10%	25V
C332	1-161-054-00	CERAMIC	0.018MF	10%	25V
C333	1-161-002-00	CERAMIC	0.0012MF	10%	25V
C334	1-161-013-00	CERAMIC	0.01MF	10%	25V
C335	1-130-494-51	MYLAR	0.082MF	5%	50V
C336	1-123-613-00	ELECT	3.3MF	20%	50V
C337	1-102-978-00	CERAMIC	220PF	5%	50V
C338	1-123-297-00	ELECT	330MF	20%	6.3V
C339	1-131-375-00	TANTALUM	4.7MF	20%	10V
C340	1-131-375-00	TANTALUM	4.7MF	20%	10V
C341	1-130-489-00	MYLAR	0.033MF	5%	50V
C342	1-123-622-00	ELECT	22MF	20%	16V
C343	1-123-647-00	ELECT	47MF	20%	6.3V
C344	1-123-661-00	ELECT	100MF	20%	6.3V
C345	1-161-055-00	CERAMIC	0.022MF	10%	25V
C346	1-161-013-00	CERAMIC	0.01MF	10%	25V
C347	1-161-054-00	CERAMIC	0.018MF	10%	25V
C348	1-131-368-00	TANTALUM	3.3MF	20%	16V
C349	1-131-347-00	TANTALUM	1MF	20%	35V
C350	1-123-647-00	ELECT	47MF	20%	6.3V
C351	1-123-612-00	ELECT	2.2MF	20%	50V
C352	1-123-821-00	ELECT	47MF	20%	16V
C353	1-161-013-00	CERAMIC	0.01MF	10%	25V
C354	1-102-114-00	CERAMIC	470PF	10%	50V
C355	1-161-013-00	CERAMIC	0.01MF	10%	25V
C356	1-123-611-00	ELECT	1MF	20%	50V
C357	1-123-616-00	ELECT	4.7MF	20%	25V
C361	1-123-616-00	ELECT	4.7MF	20%	25V
C362	1-123-612-00	ELECT	2.2MF	20%	50V
C370	1-161-059-00	CERAMIC	0.047MF	10%	25V
C371	1-161-059-00	CERAMIC	0.047MF	10%	25V
C373	1-123-616-00	ELECT	4.7MF	20%	25V
C374	1-161-059-00	CERAMIC	0.047MF	10%	25V
C401	1-130-499-51	MYLAR	0.22MF	5%	50V
C402	1-123-622-00	ELECT	22MF	20%	16V
C403	1-130-477-00	MYLAR	0.0033MF	5%	50V
C404	1-130-483-00	MYLAR	0.01MF	5%	50V
C405	1-123-298-00	ELECT	470MF	20%	6.3V
C410	1-161-054-00	CERAMIC	0.018MF	10%	25V
C411	1-161-054-00	CERAMIC	0.018MF	10%	25V
C412	1-161-055-00	CERAMIC	0.022MF	10%	25V
C413	1-161-054-00	CERAMIC	0.018MF	10%	25V
C414	1-161-013-00	CERAMIC	0.01MF	10%	25V
C415	1-161-046-00	CERAMIC	0.0039MF	10%	25V
C601	1-123-617-00	ELECT	10MF	20%	16V
C602	1-161-055-00	CERAMIC	0.022MF	10%	25V
C603	1-161-059-00	CERAMIC	0.047MF	10%	25V
C604	1-161-023-00	CERAMIC	0.068MF	10%	25V
C605	1-161-059-00	CERAMIC	0.047MF	10%	25V
C606	1-161-013-00	CERAMIC	0.01MF	10%	25V
C607	1-123-611-00	ELECT	1MF	20%	50V
C608	1-123-820-00	ELECT	33MF	20%	16V
C609	1-123-566-00	ELECT	2200MF	20%	16V
C610	1-161-059-00	CERAMIC	0.047MF	10%	25V
C611	1-161-059-00	CERAMIC	0.047MF	10%	25V
C612	1-161-059-00	CERAMIC	0.047MF	10%	25V
C613	1-161-059-00	CERAMIC	0.047MF	10%	25V
C614	1-161-059-00	CERAMIC	0.047MF	10%	25V
C615	1-161-059-00	CERAMIC	0.047MF	10%	25V
C617	1-123-645-00	ELECT	33MF	20%	10V
C618	1-101-880-00	CERAMIC	47PF	5%	50V
C619	1-101-880-00	CERAMIC	47PF	5%	50V
C620	1-161-059-00	CERAMIC	0.047MF	10%	25V
C651	1-130-489-00	MYLAR	0.033MF	5%	50V
C652	1-130-489-00	MYLAR	0.033MF	5%	50V
C653	1-130-494-51	MYLAR	0.082MF	5%	50V
C654	1-130-487-00	MYLAR	0.022MF	5%	50V
C680	1-101-882-00	CERAMIC	51PF	5%	50V
C681	1-161-013-00	CERAMIC	0.01MF	10%	25V
C682	1-123-820-00	ELECT	33MF	20%	16V
C683	1-130-483-00	MYLAR	0.01MF	5%	50V
C684	1-130-475-00	MYLAR	0.0022MF	5%	50V
C685	1-130-475-00	MYLAR	0.0022MF	5%	50V
C686	1-123-298-00	ELECT	470MF	20%	6.3V
C689	1-161-059-00	CERAMIC	0.047MF	10%	25V
C701	1-161-059-00	CERAMIC	0.047MF	10%	25V
C703	1-161-013-00	CERAMIC	0.01MF	10%	25V
C706	1-123-822-00	ELECT	47MF	20%	10V
C707	1-123-819-00	ELECT	33MF	20%	25V
C708	1-123-819-00	ELECT	33MF	20%	25V
C710	1-161-059-00	CERAMIC	0.047MF	10%	25V
C711	1-123-821-00	ELECT	47MF	20%	16V
C712	1-123-306-00	ELECT	47MF	20%	10V
C713	1-123-306-00	ELECT	47MF	20%	10V
C714	1-123-612-00	ELECT	2.2MF	20%	50V
C715	1-123-612-00	ELECT	2.2MF	20%	50V
C730	1-161-013-00	CERAMIC	0.01MF	10%	25V

When indicating parts by reference number, please include the board name.

CONNECTOR

Ref.No	Part NO.	Description	Remark
CN001♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN002♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN003♠:	1-560-469-00	PIN, CONNECTOR 6P	
CN301♠:	1-560-467-00	PIN, CONNECTOR 4P	
CN302♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN303♠:	1-560-467-00	PIN, CONNECTOR 4P	
CN304♠:	1-560-456-00	PIN, CONNECTOR 2P	
CN305♠:	1-560-467-00	PIN, CONNECTOR 4P	
CN306♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN307♠:	1-560-467-00	PIN, CONNECTOR 4P	
CN310♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN601♠:	1-560-468-00	PIN, CONNECTOR 5P	
CN602♠:	1-560-591-00	PIN, CONNECTOR 7P	
CN603♠:	1-560-471-00	PIN, CONNECTOR 10P	
CN604♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN605♠:	1-560-472-00	PIN, CONNECTOR 12P	
CN606♠:	1-560-469-00	PIN, CONNECTOR 6P	
CN607♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN608♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN610♠:	1-560-470-00	PIN, CONNECTOR 8P	
CN611♠:	1-560-456-00	PIN, CONNECTOR 2P	
CN612♠:	1-560-471-00	PIN, CONNECTOR 10P	
CN613♠:	1-560-591-00	PIN, CONNECTOR 7P	
CN614♠:	1-560-468-00	PIN, CONNECTOR 5P	
CN616♠:	1-560-591-00	PIN, CONNECTOR 7P	
CN617♠:	1-560-466-00	PIN, CONNECTOR 3P	
CN618♠:	1-560-456-00	PIN, CONNECTOR 2P	
CN619♠:	1-564-006-11	PIN, CONNECTOR 7P	
CN628	1-562-121-00	CONNECTOR, DIN 6P	
CN650♠:	1-564-187-00	PIN, CONNECTOR	
CN701♠:	1-560-471-00	PIN, CONNECTOR 10P	

DIODE

Ref.No	Part NO.	Description	Remark
D001	8-719-911-06	DIODE 1SS106	
D002	8-719-911-06	DIODE 1SS106	
D003	8-719-911-19	DIODE 1SS119	
D008	8-719-911-19	DIODE 1SS119	
D009	8-719-982-04	DIODE ERB81-004	
D010	8-719-911-19	DIODE 1SS119	
D012	8-719-911-19	DIODE 1SS119	
D013	8-719-982-04	DIODE ERB81-004	
D014	8-719-911-19	DIODE 1SS119	
D015	8-719-911-19	DIODE 1SS119	
D017	8-719-000-06	DIODE MC921	
D301	8-719-911-06	DIODE 1SS106	
D303	8-719-982-04	DIODE ERB81-004	
D304	8-719-113-07	DIODE RD13E-B	
D309	8-719-911-19	DIODE 1SS119	
D310	8-719-911-19	DIODE 1SS119	
D313	8-719-911-19	DIODE 1SS119	
D314	8-719-911-19	DIODE 1SS119	
D315	8-719-911-19	DIODE 1SS119	
D316	8-719-911-19	DIODE 1SS119	
D317	8-719-911-19	DIODE 1SS119	
D318	8-719-911-19	DIODE 1SS119	
D401	8-719-911-19	DIODE 1SS119	
D601	8-719-911-19	DIODE 1SS119	
D602	8-719-200-02	DIODE 10E2	
D603	8-719-200-02	DIODE 10E2	
D604	8-719-200-02	DIODE 10E2	
D606	8-719-200-02	DIODE 10E2	
D607	8-719-200-02	DIODE 10E2	
D608	8-719-911-19	DIODE 1SS119	
D609	8-719-911-19	DIODE 1SS119	
D610	8-719-200-02	DIODE 10E2	
D611	8-719-200-02	DIODE 10E2	
D612	8-719-200-02	DIODE 10E2	
D613	8-719-200-02	DIODE 10E2	
D614	8-719-911-06	DIODE 1SS106	
D622	=>8-719-100-57	DIODE RD10E-B2	
D624	8-719-911-19	DIODE 1SS119	
D626	8-719-911-06	DIODE 1SS106	
D628	8-719-200-02	DIODE 10E2	
D631	8-719-911-19	DIODE 1SS119	
D632	8-719-911-19	DIODE 1SS119	
D636	8-719-911-19	DIODE 1SS119	
D637	8-719-911-06	DIODE 1SS106	
D641	8-719-911-19	DIODE 1SS119	
D642	8-719-911-19	DIODE 1SS119	
D661	8-719-100-67	DIODE RD13E-B1	
D662	8-719-100-67	DIODE RD13E-B1	
D663	8-719-100-67	DIODE RD13E-B1	
D664	8-719-100-67	DIODE RD13E-B1	
D665	8-719-100-67	DIODE RD13E-B1	
D667	8-719-911-06	DIODE 1SS106	
D669	8-719-911-06	DIODE 1SS106	
D670	8-719-911-06	DIODE 1SS106	
D671	8-719-911-06	DIODE 1SS106	

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
D672	8-719-911-06	DIODE 1SS106	
D673	8-719-911-06	DIODE 1SS106	
D674	8-719-911-06	DIODE 1SS106	
D678	8-719-911-06	DIODE 1SS106	
D679	8-719-100-67	DIODE RD13E-B1	
D685	8-719-100-34	DIODE RD5.6E-B1	
D686	8-719-911-19	DIODE 1SS119	
D687	8-719-911-19	DIODE 1SS119	
D689	8-719-911-19	DIODE 1SS119	
D690	8-719-911-19	DIODE 1SS119	
D700	8-719-911-19	DIODE 1SS119	
		FUSE	
F001	⚠.1-532-610-11	FUSE, TIME-LAG 0.1A	
F603	⚠.1-532-237-11	FUSE, TIME-LAG 3.1A	
		IC	
IC001	=>8-759-729-03	IC NJM2903D	
IC002	8-759-132-40	IC UPC324C	
IC003	8-759-132-40	IC UPC324C	
IC004	=>8-759-729-03	IC NJM2903D	
IC005	8-743-980-00	IC BX3980	
IC006	8-743-976-00	IC BX3976	
IC301	8-751-941-05	IC CX194B-5	
IC302	8-759-132-40	IC UPC324C	
IC303	8-743-983-00	IC BX3983	
IC304	8-759-132-40	IC UPC324C	
IC305	8-759-904-94	IC TL494CN	
IC306	8-743-978-00	IC BX3978	
IC307	8-759-240-30	IC TC4030BP	
IC308	8-759-240-53	IC TC4053BP	
IC309	8-741-103-90	IC BX1039	
IC311	8-741-103-80	IC BX1038	
IC313	8-759-240-51	IC TC4051BP	
IC314	8-741-013-00	IC BX1013	
IC601	8-759-981-40	IC MB8855-140	
IC602	8-759-900-46	IC MB8855-161	
IC603	8-759-986-39	IC MB8855-139	
IC604	8-759-240-69	IC TC4069UBP	
IC605	8-759-220-04	IC TC40H004P	
IC606	8-759-240-13	IC TC4013BP	
IC607	8-741-104-70	IC BX1047	
IC608	=>8-759-729-03	IC NJM2903D	
IC609	8-759-903-02	IC MB8783	
IC611	8-759-903-02	IC MB8783	
IC612	8-759-200-90	IC TC4538BF	
IC613	=>8-759-340-11	IC HD14011BP	
		COIL	
L001	1-408-519-00	COIL, CHOKE	
L002	1-408-519-00	COIL, CHOKE	
L003	1-408-519-00	COIL, CHOKE	
L301	1-408-518-00	COIL, CHOKE	
L302	1-459-232-00	COIL, CORE	
L601	1-407-693-00	MICRO INDUCTOR 10UH	
		IC LINC	
PS301	⚠.1-532-605-11	LINK, IC ICP-N10	
		TRANSISTOR	
Q001	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q002	=>8-729-245-83	TRANSISTOR 2SC2458	
Q003	=>8-729-245-83	TRANSISTOR 2SC2458	
Q004	=>8-729-245-83	TRANSISTOR 2SC2458	
Q006	=>8-729-245-83	TRANSISTOR 2SC2458	
Q007	=>8-729-245-83	TRANSISTOR 2SC2458	
Q008	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q009	=>8-729-245-83	TRANSISTOR 2SC2458	
Q010	=>8-729-245-83	TRANSISTOR 2SC2458	
Q011	=>8-729-245-83	TRANSISTOR 2SC2458	
Q012	=>8-729-245-83	TRANSISTOR 2SC2458	
Q013	=>8-729-245-83	TRANSISTOR 2SC2458	
Q014	=>8-729-245-83	TRANSISTOR 2SC2458	
Q015	=>8-729-245-83	TRANSISTOR 2SC2458	
Q016	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q017	8-729-113-33	TRANSISTOR 2SB733-4	
Q018	8-729-113-33	TRANSISTOR 2SB733-4	
Q019	=>8-729-245-83	TRANSISTOR 2SC2458	
Q020	=>8-729-245-83	TRANSISTOR 2SC2458	
Q021	=>8-729-245-83	TRANSISTOR 2SC2458	
Q022	=>8-729-245-83	TRANSISTOR 2SC2458	
Q023	=>8-729-245-83	TRANSISTOR 2SC2458	
Q024	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q025	8-729-113-33	TRANSISTOR 2SB733-4	
Q026	8-729-113-33	TRANSISTOR 2SB733-4	
Q027	=>8-729-245-83	TRANSISTOR 2SC2458	
Q028	=>8-729-245-83	TRANSISTOR 2SC2458	
Q029	=>8-729-245-83	TRANSISTOR 2SC2458	
Q030	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q050	=>8-729-245-83	TRANSISTOR 2SC2458	
Q051	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q052	8-729-900-89	TRANSISTOR DTC144ES	
Q053	=>8-729-245-83	TRANSISTOR 2SC2458	
Q054	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q055	8-729-900-89	TRANSISTOR DTC144ES	
Q056	=>8-729-245-83	TRANSISTOR 2SC2458	
Q057	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q058	8-729-900-89	TRANSISTOR DTC144ES	
Q059	=>8-729-245-83	TRANSISTOR 2SC2458	
Q060	=>8-729-245-83	TRANSISTOR 2SC2458	
Q061	8-729-900-89	TRANSISTOR DTC144ES	
Q302	8-729-177-32	TRANSISTOR 2SD773	
Q303	⚠.8-729-117-54	TRANSISTOR 2SA1175	
Q304	⚠.8-729-113-33	TRANSISTOR 2SB733-4	
Q307	=>8-729-245-83	TRANSISTOR 2SC2458	

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
Q309	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q310	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q311	=>8-729-245-83	TRANSISTOR 2SC2458	
Q314	=>8-729-245-83	TRANSISTOR 2SC2458	
Q315	=>8-729-245-83	TRANSISTOR 2SC2458	
Q317	=>8-729-245-83	TRANSISTOR 2SC2458	
Q318	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q320	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q321	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q324	=>8-729-245-83	TRANSISTOR 2SC2458	
Q325	=>8-729-245-83	TRANSISTOR 2SC2458	
Q329	=>8-729-245-83	TRANSISTOR 2SC2458	
Q333	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q341	=>8-729-245-83	TRANSISTOR 2SC2458	
Q342	=>8-729-245-83	TRANSISTOR 2SC2458	
Q343	=>8-729-245-83	TRANSISTOR 2SC2458	
Q344	=>8-729-245-83	TRANSISTOR 2SC2458	
Q401	=>8-729-245-83	TRANSISTOR 2SC2458	
Q402	=>8-729-245-83	TRANSISTOR 2SC2458	
Q403	=>8-729-245-83	TRANSISTOR 2SC2458	
Q404	=>8-729-245-83	TRANSISTOR 2SC2458	
Q405	=>8-729-245-83	TRANSISTOR 2SC2458	
Q406	=>8-729-245-83	TRANSISTOR 2SC2458	
Q610	=>8-729-245-83	TRANSISTOR 2SC2458	
Q611	8-729-113-33	TRANSISTOR 2SB733-4	
Q612	8-729-177-32	TRANSISTOR 2SD773	
Q613	8-729-113-33	TRANSISTOR 2SB733-4	
Q614	8-729-177-32	TRANSISTOR 2SD773	
Q615	=>8-729-245-83	TRANSISTOR 2SC2458	
Q619	=>8-729-245-83	TRANSISTOR 2SC2458	
Q623	8-729-900-80	TRANSISTOR DTC114ES	
Q625	=>8-729-245-83	TRANSISTOR 2SC2458	
Q626	=>8-729-245-83	TRANSISTOR 2SC2458	
Q627	8-729-900-89	TRANSISTOR DTC144ES	
Q631	=>8-729-245-83	TRANSISTOR 2SC2458	
Q632	=>8-729-245-83	TRANSISTOR 2SC2458	
Q633	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q634	=>8-729-245-83	TRANSISTOR 2SC2458	
Q635	8-729-116-42	TRANSISTOR 2SD1164	
Q636	8-729-116-42	TRANSISTOR 2SD1164	
Q637	8-729-116-42	TRANSISTOR 2SD1164	
Q638	8-729-116-42	TRANSISTOR 2SD1164	
Q639	8-729-900-89	TRANSISTOR DTC144ES	
Q640	=>8-729-245-83	TRANSISTOR 2SC2458	
Q641	=>8-729-245-83	TRANSISTOR 2SC2458	
Q642	=>8-729-245-83	TRANSISTOR 2SC2458	
Q643	=>8-729-245-83	TRANSISTOR 2SC2458	
Q644	=>8-729-245-83	TRANSISTOR 2SC2458	
Q645	=>8-729-245-83	TRANSISTOR 2SC2458	
Q646	=>8-729-245-83	TRANSISTOR 2SC2458	
Q647	=>8-729-245-83	TRANSISTOR 2SC2458	
Q653	8-729-900-36	TRANSISTOR DTC124ES	
Q654	=>8-729-245-83	TRANSISTOR 2SC2458	
Q656	=>8-729-245-83	TRANSISTOR 2SC2458	
Q657	8-729-900-89	TRANSISTOR DTC144ES	
Q658	8-729-900-89	TRANSISTOR DTC144ES	
Q659	=>8-729-245-83	TRANSISTOR 2SC2458	
Q660	8-729-900-63	TRANSISTOR DTA124ES	
Q661	8-729-900-63	TRANSISTOR DTA124ES	
Q663	8-729-900-89	TRANSISTOR DTC144ES	
Q664	8-729-900-36	TRANSISTOR DTC124ES	
Q665	=>8-729-245-83	TRANSISTOR 2SC2458	
Q666	8-729-900-89	TRANSISTOR DTC144ES	
Q667	8-729-900-89	TRANSISTOR DTC144ES	
Q668	8-729-900-89	TRANSISTOR DTC144ES	
Q669	8-729-900-89	TRANSISTOR DTC144ES	
Q670	=>8-729-245-83	TRANSISTOR 2SC2458	
Q671	8-729-900-89	TRANSISTOR DTC144ES	
Q672	8-729-900-36	TRANSISTOR DTC124ES	
Q673	=>8-729-245-83	TRANSISTOR 2SC2458	
Q674	=>8-729-245-83	TRANSISTOR 2SC2458	
Q675	8-729-900-89	TRANSISTOR DTC144ES	
Q676	8-729-900-89	TRANSISTOR DTC144ES	
Q677	=>8-729-177-32	TRANSISTOR 2SD773	
Q678	8-729-900-63	TRANSISTOR DTA124ES	
Q679	=>8-729-245-83	TRANSISTOR 2SC2458	
Q680	8-729-900-36	TRANSISTOR DTC124ES	
Q681	8-729-900-89	TRANSISTOR DTC144ES	
Q682	8-729-900-89	TRANSISTOR DTC144ES	

RESISTOR

Ref.No	Part NO.	Description				Remark
R001	1-247-843-00	CARBON	3.3K	5%	1/6W	
R002	1-247-843-00	CARBON	3.3K	5%	1/6W	
R011	1-247-871-00	CARBON	47K	5%	1/6W	
R014	1-247-890-00	CARBON	300K	5%	1/6W	
R015	1-247-883-00	CARBON	150K	5%	1/6W	
R016	1-247-879-00	CARBON	100K	5%	1/6W	
R017	1-247-871-00	CARBON	47K	5%	1/6W	
R018	1-247-863-00	CARBON	22K	5%	1/6W	
R020	1-247-863-00	CARBON	22K	5%	1/6W	
R021	1-247-871-00	CARBON	47K	5%	1/6W	
R022	1-247-854-00	CARBON	9.1K	5%	1/6W	
R023	1-247-831-00	CARBON	1K	5%	1/6W	
R024	1-247-845-00	CARBON	3.9K	5%	1/6W	
R025	1-247-842-00	CARBON	3K	5%	1/6W	
R026	1-247-861-00	CARBON	18K	5%	1/6W	
R027	1-247-831-00	CARBON	1K	5%	1/6W	
R028	1-247-850-00	CARBON	6.2K	5%	1/6W	
R029	1-247-849-00	CARBON	5.6K	5%	1/6W	
R030	1-247-871-00	CARBON	47K	5%	1/6W	
R031	1-247-847-00	CARBON	4.7K	5%	1/6W	
R032	1-247-871-00	CARBON	47K	5%	1/6W	
R035	1-247-871-00	CARBON	47K	5%	1/6W	
R037	1-247-831-00	CARBON	1K	5%	1/6W	
R038	1-247-863-00	CARBON	22K	5%	1/6W	
R041	1-247-863-00	CARBON	22K	5%	1/6W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part NO.	Description			Remark
R042	1-247-863-00	CARBON	22K	5%	1/6W	
R043	1-247-855-00	CARBON	10K	5%	1/6W	
R044	1-247-871-00	CARBON	47K	5%	1/6W	
R045	1-247-107-00	CARBON	100	5%	1/4W	
R046	1-246-457-00	CARBON	220	5%	1/4W	
R055	1-247-228-00	CARBON	330	5%	1/2W	
R056	1-247-831-00	CARBON	1K	5%	1/6W	
R057	⚠ 1-217-612-00	WIREWOUND	0.1		2W	
R058	1-247-867-00	CARBON	33K	5%	1/6W	
R059	1-247-867-00	CARBON	33K	5%	1/6W	
R060	1-247-865-00	CARBON	27K	5%	1/6W	
R061	1-247-865-00	CARBON	27K	5%	1/6W	
R064	1-247-895-00	CARBON	470K	5%	1/6W	
R068	1-247-855-00	CARBON	10K	5%	1/6W	
R071	1-247-894-00	CARBON	430K	5%	1/6W	
R073	1-247-855-00	CARBON	10K	5%	1/6W	
R074	1-247-863-00	CARBON	22K	5%	1/6W	
R075	1-247-854-00	CARBON	9.1K	5%	1/6W	
R080	1-247-831-00	CARBON	1K	5%	1/6W	
R081	1-247-879-00	CARBON	100K	5%	1/6W	
R082	1-247-895-00	CARBON	470K	5%	1/6W	
R083	1-247-847-00	CARBON	4.7K	5%	1/6W	
R084	1-247-847-00	CARBON	4.7K	5%	1/6W	
R085	1-247-863-00	CARBON	22K	5%	1/6W	
R089	1-247-855-00	CARBON	10K	5%	1/6W	
R090	1-247-895-00	CARBON	470K	5%	1/6W	
R091	1-247-879-00	CARBON	100K	5%	1/6W	
R093	1-247-871-00	CARBON	47K	5%	1/6W	
R094	1-247-855-00	CARBON	10K	5%	1/6W	
R095	1-247-107-00	CARBON	100	5%	1/4W	
R096	1-246-457-00	CARBON	220	5%	1/4W	
R103	1-247-228-00	CARBON	330	5%	1/2W	
R106	1-247-831-00	CARBON	1K	5%	1/6W	
R108	1-247-871-00	CARBON	47K	5%	1/6W	
R110	1-247-887-00	CARBON	220K	5%	1/6W	
R111	1-247-871-00	CARBON	47K	5%	1/6W	
R113	1-247-871-00	CARBON	47K	5%	1/6W	
R114	1-247-871-00	CARBON	47K	5%	1/6W	
R115	1-247-867-00	CARBON	33K	5%	1/6W	
R116	1-247-838-00	CARBON	2K	5%	1/6W	
R117	1-247-863-00	CARBON	22K	5%	1/6W	
R118	1-247-863-00	CARBON	22K	5%	1/6W	
R150	1-247-871-00	CARBON	47K	5%	1/6W	
R151	1-247-867-00	CARBON	33K	5%	1/6W	
R152	1-247-871-00	CARBON	47K	5%	1/6W	
R153	1-247-871-00	CARBON	47K	5%	1/6W	
R156	1-247-871-00	CARBON	47K	5%	1/6W	
R157	1-247-867-00	CARBON	33K	5%	1/6W	
R158	1-247-855-00	CARBON	10K	5%	1/6W	
R159	1-247-863-00	CARBON	22K	5%	1/6W	
R161	1-247-871-00	CARBON	47K	5%	1/6W	
R162	1-247-867-00	CARBON	33K	5%	1/6W	
R163	1-247-855-00	CARBON	10K	5%	1/6W	

Ref.No	Part NO.	Description				Remark
R164	1-247-863-00	CARBON	22K	5%	1/6W	
R166	1-247-843-00	CARBON	3.3K	5%	1/6W	
R167	1-247-861-00	CARBON	18K	5%	1/6W	
R168	1-247-859-00	CARBON	15K	5%	1/6W	
R169	1-247-870-00	CARBON	43K	5%	1/6W	
R170	1-247-871-00	CARBON	47K	5%	1/6W	
R171	1-247-871-00	CARBON	47K	5%	1/6W	
R172	1-247-855-00	CARBON	10K	5%	1/6W	
R175	1-247-879-00	CARBON	100K	5%	1/6W	
R176	1-247-881-00	CARBON	120K	5%	1/6W	
R301	1-247-863-00	CARBON	22K	5%	1/6W	
R302	1-247-871-00	CARBON	47K	5%	1/6W	
R303	1-247-859-00	CARBON	15K	5%	1/6W	
R304	1-247-831-00	CARBON	1K	5%	1/6W	
R305	1-247-844-00	CARBON	3.6K	5%	1/6W	
R306	1-247-831-00	CARBON	1K	5%	1/6W	
R310	1-247-855-00	CARBON	10K	5%	1/6W	
R311	1-247-855-00	CARBON	10K	5%	1/6W	
R312	1-247-855-00	CARBON	10K	5%	1/6W	
R315	1-247-856-00	CARBON	11K	5%	1/6W	
R316	1-247-875-00	CARBON	68K	5%	1/6W	
R318	1-247-848-00	CARBON	5.1K	5%	1/6W	
R321	1-247-833-00	CARBON	1.2K	5%	1/6W	
R322	⚠ 1-212-360-00	METAL OXIDE	1	5%	1W	F
R323	1-247-863-00	CARBON	22K	5%	1/6W	
R327	1-247-859-00	CARBON	15K	5%	1/6W	
R329	⚠ 1-212-850-00	FUSIBLE	5.1	5%	1/4W	F
R330	1-247-855-00	CARBON	10K	5%	1/6W	
R331	1-247-883-00	CARBON	150K	5%	1/6W	
R334	1-247-867-00	CARBON	33K	5%	1/6W	
R337	1-247-867-00	CARBON	33K	5%	1/6W	
R338	1-247-883-00	CARBON	150K	5%	1/6W	
R339	1-247-885-00	CARBON	180K	5%	1/6W	
R340	1-247-841-00	CARBON	2.7K	5%	1/6W	
R342	1-247-867-00	CARBON	33K	5%	1/6W	
R344	1-247-867-00	CARBON	33K	5%	1/6W	
R345	1-247-867-00	CARBON	33K	5%	1/6W	
R346	1-247-879-00	CARBON	100K	5%	1/6W	
R347	1-247-877-00	CARBON	82K	5%	1/6W	
R348	1-247-867-00	CARBON	33K	5%	1/6W	
R349	1-214-140-00	METAL	2.2K	1%	1/4W	
R350	1-214-140-00	METAL	2.2K	1%	1/4W	
R351	1-214-140-00	METAL	2.2K	1%	1/4W	
R352	1-214-140-00	METAL	2.2K	1%	1/4W	
R354	1-247-855-00	CARBON	10K	5%	1/6W	
R355	1-247-855-00	CARBON	10K	5%	1/6W	
R358	1-247-871-00	CARBON	47K	5%	1/6W	
R369	1-247-868-00	CARBON	36K	5%	1/6W	
R370	1-247-867-00	CARBON	33K	5%	1/6W	
R371	1-247-855-00	CARBON	10K	5%	1/6W	
R373	1-247-831-00	CARBON	1K	5%	1/6W	
R374	1-247-873-00	CARBON	56K	5%	1/6W	
R375	1-247-855-00	CARBON	10K	5%	1/6W	

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description				Remark
R377	1-247-855-00	CARBON	10K	5%	1/6W	
R378	1-247-863-00	CARBON	22K	5%	1/6W	
R381	1-247-831-00	CARBON	1K	5%	1/6W	
R387	1-247-855-00	CARBON	10K	5%	1/6W	
R390	1-247-846-00	CARBON	4.3K	5%	1/6W	
R394	1-247-867-00	CARBON	33K	5%	1/6W	
R396	1-247-885-00	CARBON	180K	5%	1/6W	
R397	1-247-867-00	CARBON	33K	5%	1/6W	
R398	1-247-867-00	CARBON	33K	5%	1/6W	
R399	1-247-818-00	CARBON	300	5%	1/6W	
R400	1-247-857-00	CARBON	12K	5%	1/6W	
R401	1-246-457-00	CARBON	220	5%	1/4W	
R404	1-247-867-00	CARBON	33K	5%	1/6W	
R407	1-247-871-00	CARBON	47K	5%	1/6W	
R410	1-247-899-00	CARBON	680K	5%	1/6W	
R411	1-247-871-00	CARBON	47K	5%	1/6W	
R412	1-247-855-00	CARBON	10K	5%	1/6W	
R413	1-247-849-00	CARBON	5.6K	5%	1/6W	
R414	1-247-849-00	CARBON	5.6K	5%	1/6W	
R416	1-247-863-00	CARBON	22K	5%	1/6W	
R417	1-247-831-00	CARBON	1K	5%	1/6W	
R451	1-247-891-00	CARBON	330K	5%	1/6W	
R452	1-247-859-00	CARBON	15K	5%	1/6W	
R453	1-247-888-00	CARBON	240K	5%	1/6W	
R460	1-247-855-00	CARBON	10K	5%	1/6W	
R468	1-247-847-00	CARBON	4.7K	5%	1/6W	
R473	1-247-871-00	CARBON	47K	5%	1/6W	
R474	1-247-849-00	CARBON	5.6K	5%	1/6W	
R480	1-247-871-00	CARBON	47K	5%	1/6W	
R481	1-247-871-00	CARBON	47K	5%	1/6W	
R484	1-247-847-00	CARBON	4.7K	5%	1/6W	
R486	1-247-871-00	CARBON	47K	5%	1/6W	
R487	1-247-855-00	CARBON	10K	5%	1/6W	
R488	1-247-866-00	CARBON	30K	5%	1/6W	
R489	1-247-832-00	CARBON	1.1K	5%	1/6W	
R490	1-247-857-00	CARBON	12K	5%	1/6W	
R495	⚠.1-206-482-00	METAL OXIDE	62	5%	2W	F
R496	1-247-823-00	CARBON	470	5%	1/6W	
R498	1-247-871-00	CARBON	47K	5%	1/6W	
R501	1-247-848-00	CARBON	5.1K	5%	1/6W	
R502	1-247-845-00	CARBON	3.9K	5%	1/6W	
R503	1-247-783-00	CARBON	10	5%	1/6W	
R511	1-247-831-00	CARBON	1K	5%	1/6W	
R512	1-247-879-00	CARBON	100K	5%	1/6W	
R513	1-247-879-00	CARBON	100K	5%	1/6W	
R519	1-247-855-00	CARBON	10K	5%	1/6W	
R520	1-247-879-00	CARBON	100K	5%	1/6W	
R521	1-247-871-00	CARBON	47K	5%	1/6W	
R522	1-247-855-00	CARBON	10K	5%	1/6W	
R523	1-247-855-00	CARBON	10K	5%	1/6W	
R525	1-247-855-00	CARBON	10K	5%	1/6W	
R526	1-247-855-00	CARBON	10K	5%	1/6W	
R527	1-247-871-00	CARBON	47K	5%	1/6W	

Ref.No	Part NO.	Description				Remark
R529	1-247-875-00	CARBON	68K	5%	1/6W	
R531	1-247-887-00	CARBON	220K	5%	1/6W	
R532	1-247-886-00	CARBON	200K	5%	1/6W	
R548	1-247-855-00	CARBON	10K	5%	1/6W	
R550	1-247-855-00	CARBON	10K	5%	1/6W	
R551	1-247-879-00	CARBON	100K	5%	1/6W	
R552	1-247-871-00	CARBON	47K	5%	1/6W	
R553	1-247-855-00	CARBON	10K	5%	1/6W	
R554	1-247-867-00	CARBON	33K	5%	1/6W	
R555	1-247-871-00	CARBON	47K	5%	1/6W	
R556	1-247-871-00	CARBON	47K	5%	1/6W	
R557	1-247-871-00	CARBON	47K	5%	1/6W	
R558	1-247-887-00	CARBON	220K	5%	1/6W	
R559	1-247-887-00	CARBON	220K	5%	1/6W	
R560	1-247-865-00	CARBON	27K	5%	1/6W	
R561	1-247-865-00	CARBON	27K	5%	1/6W	
R562	1-247-867-00	CARBON	33K	5%	1/6W	
R563	1-247-867-00	CARBON	33K	5%	1/6W	
R564	1-247-855-00	CARBON	10K	5%	1/6W	
R565	1-247-859-00	CARBON	15K	5%	1/6W	
R566	1-247-878-00	CARBON	91K	5%	1/6W	
R567	1-247-859-00	CARBON	15K	5%	1/6W	
R568	1-247-871-00	CARBON	47K	5%	1/6W	
R569	1-247-867-00	CARBON	33K	5%	1/6W	
R571	1-247-871-00	CARBON	47K	5%	1/6W	
R572	1-247-855-00	CARBON	10K	5%	1/6W	
R573	1-247-871-00	CARBON	47K	5%	1/6W	
R574	1-247-831-00	CARBON	1K	5%	1/6W	
R575	1-247-879-00	CARBON	100K	5%	1/6W	
R576	1-247-855-00	CARBON	10K	5%	1/6W	
R580	1-247-831-00	CARBON	1K	5%	1/6W	
R601	1-247-862-00	CARBON	20K	5%	1/6W	
R602	1-247-855-00	CARBON	10K	5%	1/6W	
R603	1-247-847-00	CARBON	4.7K	5%	1/6W	
R604	1-247-831-00	CARBON	1K	5%	1/6W	
R605	1-247-831-00	CARBON	1K	5%	1/6W	
R606	1-247-867-00	CARBON	33K	5%	1/6W	
R607	1-247-867-00	CARBON	33K	5%	1/6W	
R608	1-247-867-00	CARBON	33K	5%	1/6W	
R609	1-247-863-00	CARBON	22K	5%	1/6W	
R612	⚠.1-206-640-00	METAL OXIDE	100	5%	2W	F
R613	1-247-831-00	CARBON	1K	5%	1/6W	
R614	1-247-831-00	CARBON	1K	5%	1/6W	
R615	1-247-839-00	CARBON	2.2K	5%	1/6W	
R616	1-247-843-00	CARBON	3.3K	5%	1/6W	
R617	1-247-830-00	CARBON	910	5%	1/6W	
R618	⚠.1-247-587-00	CARBON	0.47	5%	1/4W	
R619	1-247-843-00	CARBON	3.3K	5%	1/6W	
R620	1-247-830-00	CARBON	910	5%	1/6W	
R625	1-247-859-00	CARBON	15K	5%	1/6W	
R626	1-247-855-00	CARBON	10K	5%	1/6W	
R627	1-247-853-00	CARBON	8.2K	5%	1/6W	
R628	1-247-831-00	CARBON	1K	5%	1/6W	

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

SS-29

Ref.No	Part NO.	Description				Remark
R629	1-247-831-00	CARBON	1K	5%	1/6W	
R630	1-247-831-00	CARBON	1K	5%	1/6W	
R631	1-247-831-00	CARBON	1K	5%	1/6W	
R632	1-247-851-00	CARBON	6.8K	5%	1/6W	
R633	1-247-839-00	CARBON	2.2K	5%	1/6W	
R634	1-247-839-00	CARBON	2.2K	5%	1/6W	
R635	1-247-847-00	CARBON	4.7K	5%	1/6W	
R640	1-247-827-00	CARBON	680	5%	1/6W	
R644	1-247-895-00	CARBON	470K	5%	1/6W	
R645	1-247-867-00	CARBON	33K	5%	1/6W	
R651	1-247-843-00	CARBON	3.3K	5%	1/6W	
R652	1-247-855-00	CARBON	10K	5%	1/6W	
R653	1-247-873-00	CARBON	56K	5%	1/6W	
R654	1-247-873-00	CARBON	56K	5%	1/6W	
R655	1-247-855-00	CARBON	10K	5%	1/6W	
R656	1-247-855-00	CARBON	10K	5%	1/6W	
R657	1-247-868-00	CARBON	36K	5%	1/6W	
R658	1-247-843-00	CARBON	3.3K	5%	1/6W	
R671	1-247-855-00	CARBON	10K	5%	1/6W	
R672	1-247-871-00	CARBON	47K	5%	1/6W	
R676	1-247-831-00	CARBON	1K	5%	1/6W	
R677	1-247-855-00	CARBON	10K	5%	1/6W	
R678	1-247-831-00	CARBON	1K	5%	1/6W	
R679	1-247-879-00	CARBON	100K	5%	1/6W	
R680	1-247-843-00	CARBON	3.3K	5%	1/6W	
R681	1-247-823-00	CARBON	470	5%	1/6W	
R682	1-247-847-00	CARBON	4.7K	5%	1/6W	
R683	1-247-847-00	CARBON	4.7K	5%	1/6W	
R690	1-247-871-00	CARBON	47K	5%	1/6W	
R691	1-247-871-00	CARBON	47K	5%	1/6W	
R692	1-247-867-00	CARBON	33K	5%	1/6W	
R695	1-247-879-00	CARBON	100K	5%	1/6W	
R696	1-247-879-00	CARBON	100K	5%	1/6W	
R697	1-247-839-00	CARBON	2.2K	5%	1/6W	
R698	1-247-855-00	CARBON	10K	5%	1/6W	
R699	1-247-855-00	CARBON	10K	5%	1/6W	
R702	1-247-867-00	CARBON	33K	5%	1/6W	
R703	1-247-867-00	CARBON	33K	5%	1/6W	
R705	1-247-867-00	CARBON	33K	5%	1/6W	
R706	1-247-871-00	CARBON	47K	5%	1/6W	
R707	1-247-867-00	CARBON	33K	5%	1/6W	
R708	1-247-867-00	CARBON	33K	5%	1/6W	
R710	1-247-839-00	CARBON	2.2K	5%	1/6W	
R718	1-247-845-00	CARBON	3.9K	5%	1/6W	
R719	1-247-877-00	CARBON	82K	5%	1/6W	
R720	1-247-867-00	CARBON	33K	5%	1/6W	
R724	1-247-871-00	CARBON	47K	5%	1/6W	
R726	1-247-867-00	CARBON	33K	5%	1/6W	
R728	1-247-847-00	CARBON	4.7K	5%	1/6W	
R729	1-247-855-00	CARBON	10K	5%	1/6W	
R743	1-247-867-00	CARBON	33K	5%	1/6W	
R744	1-247-867-00	CARBON	33K	5%	1/6W	
R745	1-247-867-00	CARBON	33K	5%	1/6W	

Ref.No	Part NO.	Description				Remark
R747	1-247-811-00	CARBON	150	5%	1/6W	
R748	1-247-855-00	CARBON	10K	5%	1/6W	
R750	1-247-871-00	CARBON	47K	5%	1/6W	
R751	1-247-871-00	CARBON	47K	5%	1/6W	
R752	1-247-871-00	CARBON	47K	5%	1/6W	
R753	1-247-871-00	CARBON	47K	5%	1/6W	
R754	1-247-867-00	CARBON	33K	5%	1/6W	
R755	1-247-863-00	CARBON	22K	5%	1/6W	
R756	1-247-863-00	CARBON	22K	5%	1/6W	
R757	1-247-863-00	CARBON	22K	5%	1/6W	
R761	1-247-803-00	CARBON	68	5%	1/6W	
R762	1-247-879-00	CARBON	100K	5%	1/6W	
R763	1-247-863-00	CARBON	22K	5%	1/6W	
R764	1-247-867-00	CARBON	33K	5%	1/6W	
R765	1-247-867-00	CARBON	33K	5%	1/6W	
R766	1-247-855-00	CARBON	10K	5%	1/6W	
R767	1-247-855-00	CARBON	10K	5%	1/6W	
R768	1-247-863-00	CARBON	22K	5%	1/6W	
R769	1-247-867-00	CARBON	33K	5%	1/6W	
R770	1-247-849-00	CARBON	5.6K	5%	1/6W	
R771	1-247-871-00	CARBON	47K	5%	1/6W	
R772	1-247-863-00	CARBON	22K	5%	1/6W	
R775	1-247-863-00	CARBON	22K	5%	1/6W	
R776	1-247-867-00	CARBON	33K	5%	1/6W	
R780	1-247-855-00	CARBON	10K	5%	1/6W	
R781	1-247-855-00	CARBON	10K	5%	1/6W	
R859	1-247-867-00	CARBON	33K	5%	1/6W	
R860	1-247-855-00	CARBON	10K	5%	1/6W	
R863	1-247-863-00	CARBON	22K	5%	1/6W	
R865 ⚠	1-206-479-00	METAL OXIDE	47	5%	2W	F
R866	1-247-819-00	CARBON	330	5%	1/6W	
R867	1-247-867-00	CARBON	33K	5%	1/6W	
R868	1-247-867-00	CARBON	33K	5%	1/6W	
R869	1-247-863-00	CARBON	22K	5%	1/6W	
R870	1-247-847-00	CARBON	4.7K	5%	1/6W	
R871	1-247-901-00	CARBON	820K	5%	1/6W	
R872	1-247-855-00	CARBON	10K	5%	1/6W	
R873	1-247-855-00	CARBON	10K	5%	1/6W	
R874	1-247-863-00	CARBON	22K	5%	1/6W	
R875	1-247-831-00	CARBON	1K	5%	1/6W	
R890	1-247-845-00	CARBON	3.9K	5%	1/6W	

VARIABLE RESISTOR

RV001	1-226-774-00	RES, ADJ, METAL GLAZE 47K
RV002	1-226-773-00	RES, ADJ, METAL GLAZE 22K
RV003	1-226-776-00	RES, ADJ, METAL GLAZE 220K
RV301	1-226-753-00	RES, ADJ, SOLID 47K
RV302	1-224-254-XX	RES, ADJ, METAL GLAZE 47K
RV303	1-226-771-00	RES, ADJ, METAL GLAZE 1K
RV304	1-226-753-00	RES, ADJ, SOLID 47K
RV305	1-226-774-00	RES, ADJ, METAL GLAZE 47K
RV309	1-226-703-00	RES, ADJ, METAL GLAZE 10K
RV310	1-226-703-00	RES, ADJ, METAL GLAZE 10K
RV314	1-226-775-00	RES, ADJ, METAL GLAZE 100K

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
RV315	1-226-701-00	RES, ADJ, METAL GLAZE 220	
RV316	1-226-701-00	RES, ADJ, METAL GLAZE 220	
RV318	1-226-709-00	RES, ADJ, SOLID 4.7K	
		THERMISTOR	
TH001	1-800-198-XX	THERMISTOR S-1K	
TH301	1-806-717-00	THERMISTOR	
TH302	1-806-718-00	THERMISTOR	
		CRYSTAL	
X601	1-527-726-00	VIBRATOR, CRYSTAL	

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	⚠:1-613-310-11	SC-2 BOARD ***********			
		CAPACITOR			
C709	1-161-059-00	CERAMIC	0.047MF	10%	25V
C721	1-102-816-00	CERAMIC	120PF	5%	50V
C722	1-101-880-00	CERAMIC	47PF	5%	50V
		IC			
IC610	8-759-911-03	IC MB88421-157L			
		RESISTOR			
R760	1-247-831-00	CARBON	1K	5%	1/6W
R774	1-247-863-00	CARBON	22K	5%	1/6W
R856	1-247-871-00	CARBON	47K	5%	1/6W
R858	1-247-887-00	CARBON	220K	5%	1/6W
R861	1-247-863-00	CARBON	22K	5%	1/6W
R862	1-247-863-00	CARBON	22K	5%	1/6W
R870	1-247-855-00	CARBON	10K	5%	1/6W
R871	1-247-855-00	CARBON	10K	5%	1/6W
R872	1-247-855-00	CARBON	10K	5%	1/6W
R873	1-247-855-00	CARBON	10K	5%	1/6W
R874	1-247-855-00	CARBON	10K	5%	1/6W
		CRYSTAL			
X610	1-527-822-00	OSCILLATOR, CERAMIC			

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Ref.No	Part NO.	Description				Remark
	⚠:1-613-621-12	SC-3 BOARD ***********				
		CAPACITOR				
C716	1-123-620-00	ELECT	10MF	20%	25V	
C717	1-123-619-00	ELECT	4.7MF	20%	50V	
C718	1-123-619-00	ELECT	4.7MF	20%	50V	
		CONNECTOR				
CN640⚠:	1-560-462-00	PIN, CONNECTOR 6P				
CN641⚠:	1-560-463-00	PIN, CONNECTOR 8P				
		DIODE				
D691	8-719-911-19	DIODE 1SS119				
D692	8-719-911-19	DIODE 1SS119				
D693	8-719-911-19	DIODE 1SS119				
D694	8-719-911-19	DIODE 1SS119				
D695	8-719-911-19	DIODE 1SS119				
D696	8-719-911-19	DIODE 1SS119				
D697	8-719-911-19	DIODE 1SS119				
D698	8-719-911-19	DIODE 1SS119				
D699	8-719-911-19	DIODE 1SS119				
		IC				
IC614	8-759-240-13	IC TC4013BP				
IC615=>	8-759-345-83	IC HD14538BP				
		TRANSISTOR				
Q683	8-729-900-89	TRANSISTOR DTC144ES				
Q684	8-729-900-89	TRANSISTOR DTC144ES				
Q685	8-729-900-89	TRANSISTOR DTC144ES				
Q686	8-729-900-89	TRANSISTOR DTC144ES				
Q687	8-729-178-54	TRANSISTOR 2SC2785				
Q688	8-729-178-54	TRANSISTOR 2SC2785				
		RESISTOR				
R875	1-247-855-00	CARBON	10K	5%	1/6W	
R876	1-247-855-00	CARBON	10K	5%	1/6W	
R877	1-247-855-00	CARBON	10K	5%	1/6W	
R878	1-247-855-00	CARBON	10K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description				Remark
R879	1-247-855-00	CARBON	10K	5%	1/6W	
R880	1-247-855-00	CARBON	10K	5%	1/6W	
R881	1-247-855-00	CARBON	10K	5%	1/6W	
R882	1-247-855-00	CARBON	10K	5%	1/6W	
R883	1-247-867-00	CARBON	33K	5%	1/6W	
R884	1-247-855-00	CARBON	10K	5%	1/6W	
R885	1-247-873-00	CARBON	56K	5%	1/6W	
R886	1-247-847-00	CARBON	4.7K	5%	1/6W	
R887	1-247-855-00	CARBON	10K	5%	1/6W	

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♠:A-6717-367-A FU-24 BOARD, COMPLETE
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CAPACITOR

Ref.No	Part NO.	Description				Remark
C001	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C002	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C003	1-161-059-00	CERAMIC	0.047MF	10%	25V	
C004	1-123-647-00	ELECT	47MF	20%	6.3V	
C005	1-130-491-00	MYLAR	0.047MF	5%	50V	
C006	1-123-611-00	ELECT	1MF	20%	50V	
C007	1-161-013-00	CERAMIC	0.01MF	10%	25V	

DIODE

Ref.No	Part NO.	Description	Remark
D001	8-719-908-53	DIODE SLR-54DC3	
D002	8-719-908-55	DIODE SLR-54YC3	
D003	8-719-908-53	DIODE SLR-54DC3	
D004	8-719-908-55	DIODE SLR-54YC3	
D005	8-719-908-55	DIODE SLR-54YC3	
D006	8-719-908-55	DIODE SLR-54YC3	
D007	8-719-908-54	DIODE SLR-54VC3	
D008	8-719-908-50	DIODE SLR-54MC3	
D009	8-719-908-55	DIODE SLR-54YC3	
D010	8-719-908-55	DIODE SLR-54YC3	
D011	8-719-908-50	DIODE SLR-54MC3	

LED INDICATOR

Ref.No	Part NO.	Description	Remark
D012	1-806-913-11	INDICATOR, LED	

IC

Ref.No	Part NO.	Description	Remark
IC001	=>8-759-991-00	IC CX7991	
IC002	8-757-991-00	IC CX7991	
IC003	8-759-987-47	IC MB8747	

TRANSISTOR

Ref.No	Part NO.	Description	Remark
Q001	=>8-729-245-83	TRANSISTOR 2SC2458	
Q002	8-729-987-42	TRANSISTOR 2SA874	
Q003	8-729-987-42	TRANSISTOR 2SA874	
Q004	8-729-987-42	TRANSISTOR 2SA874	
Q005	8-729-987-42	TRANSISTOR 2SA874	
Q006	8-729-900-37	TRANSISTOR DTC124EF	
Q007	8-729-900-37	TRANSISTOR DTC124EF	
Q008	=>8-729-245-83	TRANSISTOR 2SC2458	
Q009	=>8-729-204-83	TRANSISTOR 2SA1048-GR	
Q010	=>8-729-245-83	TRANSISTOR 2SC2458	
Q011	=>8-729-245-83	TRANSISTOR 2SC2458	
Q012	8-729-900-45	TRANSISTOR DTC114EF	
Q013	8-729-900-45	TRANSISTOR DTC114EF	
Q014	8-729-900-45	TRANSISTOR DTC114EF	
Q015	8-729-900-45	TRANSISTOR DTC114EF	
Q016	8-729-900-45	TRANSISTOR DTC114EF	
Q017	8-729-900-45	TRANSISTOR DTC114EF	
Q018	8-729-900-45	TRANSISTOR DTC114EF	
Q019	8-729-900-37	TRANSISTOR DTC124EF	
Q020	8-729-900-37	TRANSISTOR DTC124EF	
Q021	8-729-900-37	TRANSISTOR DTC124EF	

RESISTOR

Ref.No	Part NO.	Description				Remark
R002	1-247-863-00	CARBON	22K	5%	1/6W	
R003	1-247-863-00	CARBON	22K	5%	1/6W	
R004	1-247-863-00	CARBON	22K	5%	1/6W	
R005	1-247-847-00	CARBON	4.7K	5%	1/6W	
R006	1-247-831-00	CARBON	1K	5%	1/6W	
R007	1-247-831-00	CARBON	1K	5%	1/6W	
R009	1-247-871-00	CARBON	47K	5%	1/6W	
R010	1-247-811-00	CARBON	150	5%	1/6W	
R011	1-247-817-00	CARBON	270	5%	1/6W	
R012	1-247-815-00	CARBON	220	5%	1/6W	
R013	1-247-811-00	CARBON	150	5%	1/6W	
R014	1-247-815-00	CARBON	220	5%	1/6W	
R015	1-247-815-00	CARBON	220	5%	1/6W	
R017	1-247-847-00	CARBON	4.7K	5%	1/6W	
R018	1-247-811-00	CARBON	150	5%	1/6W	
R019	1-247-811-00	CARBON	150	5%	1/6W	
R020	1-247-811-00	CARBON	150	5%	1/6W	
R021	1-247-811-00	CARBON	150	5%	1/6W	
R022	1-247-811-00	CARBON	150	5%	1/6W	
R023	1-247-811-00	CARBON	150	5%	1/6W	
R024	1-247-811-00	CARBON	150	5%	1/6W	
R025	1-247-855-00	CARBON	10K	5%	1/6W	
R026	1-247-855-00	CARBON	10K	5%	1/6W	
R027	1-247-855-00	CARBON	10K	5%	1/6W	
R028	1-247-855-00	CARBON	10K	5%	1/6W	
R029	1-247-843-00	CARBON	3.3K	5%	1/6W	
R030	1-247-843-00	CARBON	3.3K	5%	1/6W	
R031	1-247-843-00	CARBON	3.3K	5%	1/6W	
R032	1-247-843-00	CARBON	3.3K	5%	1/6W	
R033	1-247-863-00	CARBON	22K	5%	1/6W	
R036	1-247-847-00	CARBON	4.7K	5%	1/6W	
R037	1-247-831-00	CARBON	1K	5%	1/6W	
R038	1-247-831-00	CARBON	1K	5%	1/6W	
R039	1-247-863-00	CARBON	22K	5%	1/6W	

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description	Remark
		VARIABLE RESISTOR	
RV001	1-226-497-00	RES, VAR, CARBON 100K	
		SWITCH	
S001	1-553-997-00	SWITCH, KEY BOARD	
S002	1-553-997-00	SWITCH, KEY BOARD	
S003	1-553-997-00	SWITCH, KEY BOARD	
S004	1-553-997-00	SWITCH, KEY BOARD	
S005	1-553-997-00	SWITCH, KEY BOARD	
S006	1-553-997-00	SWITCH, KEY BOARD	
S007	1-553-997-00	SWITCH, KEY BOARD	
S008	1-553-997-00	SWITCH, KEY BOARD	
S009	1-553-997-00	SWITCH, KEY BOARD	
S010	1-553-997-00	SWITCH, KEY BOARD	
S011	1-553-997-00	SWITCH, KEY BOARD	

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♠:1-613-309-11 RL-19 BOARD

		CONNECTOR	
CN501	♠:1-560-471-00	PIN, CONNECTOR 10P	
CN502	♠:1-560-591-00	PIN, CONNECTOR 7P	
CN503	♠:1-560-459-00	PIN, CONNECTOR 3P	
CN504	♠:1-560-459-00	PIN, CONNECTOR 3P	
CN505	♠:1-560-455-00	PIN, CONNECTOR 2P	
CN506	♠:1-560-455-00	PIN, CONNECTOR 2P	
CN507	♠:1-560-455-00	PIN, CONNECTOR 2P	
CN511	♠:1-560-455-00	PIN, CONNECTOR 2P	
CN512	♠:1-560-459-00	PIN, CONNECTOR 3P	

* * *

♠:1-613-308-11 SW-34 BOARD

		DIODE	
D001	8-719-913-58	DIODE LT-9220N	
D003	8-719-908-55	DIODE SLR-54YC3	
D004	8-719-908-55	DIODE SLR-54YC3	
D005	8-719-908-55	DIODE SLR-54YC3	
D006	8-719-908-55	DIODE SLR-54YC3	
D007	8-719-908-55	DIODE SLR-54YC3	
D008	8-719-908-55	DIODE SLR-54YC3	
D009	8-719-908-55	DIODE SLR-54YC3	
D010	8-719-908-55	DIODE SLR-54YC3	
D011	8-719-113-07	DIODE RD13E-B	
D013	8-719-113-07	DIODE RD13E-B	
D014	8-719-113-07	DIODE RD13E-B	
		TRANSISTOR	
Q001	8-729-900-38	TRANSISTOR DTA114EF	

Ref.No	Part NO.	Description	Remark
Q002	8-729-900-38	TRANSISTOR DTA114EF	
Q003	8-729-900-45	TRANSISTOR DTC114EF	
		RESISTOR	
R001	1-247-803-00	CARBON 68 5% 1/6W	
R002	1-247-813-00	CARBON 180 5% 1/6W	
R003	1-247-803-00	CARBON 68 5% 1/6W	
R004	1-247-803-00	CARBON 68 5% 1/6W	
R005	1-247-803-00	CARBON 68 5% 1/6W	
R006	1-247-813-00	CARBON 180 5% 1/6W	
R007	1-247-803-00	CARBON 68 5% 1/6W	
		VARIABLE RESISTOR	
RV001	1-230-539-11	RES, VAR, CARBON 20K	
RV002	1-230-539-11	RES, VAR, CARBON 20K	
RV003	1-230-539-11	RES, VAR, CARBON 20K	
RV004	1-230-539-11	RES, VAR, CARBON 20K	
RV005	1-230-540-11	RES, VAR, CARBON 10K/10K	
		SWITCH	
S002	1-553-766-00	SWITCH, KEY BOARD	
S003	1-553-766-00	SWITCH, KEY BOARD	
S004	1-553-766-00	SWITCH, KEY BOARD	

* * *

♠:1-605-071-00 LM-8 BOARD

		CAPACITOR	
C101	1-161-057-00	CERAMIC 0.033MF 10% 50V	
C102	1-161-057-00	CERAMIC 0.033MF 10% 50V	
		COIL	
L101	1-408-120-00	MICRO INDUCTOR 18UH	
L102	1-408-120-00	MICRO INDUCTOR 18UH	
		RESISTOR	
R101	1-206-640-00	METAL OXIDE 100 5% 2W F	

* * *

♠:A-6729-047-A RR-5 BOARD, COMPLETE

	♠:3-687-298-01	LID, UPPER, SHIELD CASE	
	♠:3-687-299-01	LID, BOTTOM, SHIELD CASE	
	♠:3-687-300-01	LID, UPPER, SHIELD CASE	
	♠:3-687-301-01	LID, BOTTOM, SHIELD CASE	
		CAPACITOR	
C203	1-102-978-00	CERAMIC 220PF 5% 50V	
C204	1-102-978-00	CERAMIC 220PF 5% 50V	
C205	1-123-380-00	ELECT 1MF 20% 50V	
C206	1-161-013-00	CERAMIC 0.01MF 10% 25V	
C207	1-161-039-00	CERAMIC 0.001MF 10% 25V	

When indicating parts by reference number, please include the board name.

Ref.No	Part NO.	Description			Remark
C208	1-123-332-00	ELECT	47MF	20%	16V
C209	1-161-039-00	CERAMIC	0.001MF	10%	25V
C501	1-161-059-00	CERAMIC	0.047MF	10%	25V
C502	1-123-330-00	ELECT	22MF	20%	16V
C503	1-102-978-00	CERAMIC	220PF	5%	50V
C504	1-102-978-00	CERAMIC	220PF	5%	50V
C505	1-123-306-00	ELECT	47MF	20%	6.3V

DIODE

D201	8-719-102-90	DIODE RD10E-N2
D202	8-719-182-07	DIODE RD8.2E-B
D203	8-719-100-56	DIODE RD10E-B1
D204	8-719-911-19	DIODE 1SS119
D501	8-719-130-07	DIODE RD3.0E-B
D502	8-719-911-19	DIODE 1SS119
D503	8-719-911-19	DIODE 1SS119
D504	8-719-911-19	DIODE 1SS119

IC

IC201	8-759-300-27	IC HD38757A-05
IC501	8-759-100-80	IC UPD652C-040

TRANSISTOR

Q201	=>8-729-204-83	TRANSISTOR 2SA1048-GR
Q202	=>8-729-245-83	TRANSISTOR 2SC2458
Q205	=>8-729-245-83	TRANSISTOR 2SC2458
Q206	=>8-729-245-83	TRANSISTOR 2SC2458
Q207	=>8-729-204-83	TRANSISTOR 2SA1048-GR
Q507	=>8-729-245-83	TRANSISTOR 2SC2458

RESISTOR

R202	1-247-863-00	CARBON	22K	5%	1/6W
R203	1-247-843-00	CARBON	3.3K	5%	1/6W
R204	1-247-855-00	CARBON	10K	5%	1/6W
R205	1-247-863-00	CARBON	22K	5%	1/6W
R214	1-247-855-00	CARBON	10K	5%	1/6W
R215	1-247-855-00	CARBON	10K	5%	1/6W
R216	1-247-855-00	CARBON	10K	5%	1/6W
R218	1-247-855-00	CARBON	10K	5%	1/6W
R219	1-247-903-00	CARBON	1M	5%	1/6W
R220	1-247-871-00	CARBON	47K	5%	1/6W
R221	1-247-863-00	CARBON	22K	5%	1/6W
R222	1-247-871-00	CARBON	47K	5%	1/6W
R223	1-247-871-00	CARBON	47K	5%	1/6W
R225	1-247-871-00	CARBON	47K	5%	1/6W
R226	1-247-863-00	CARBON	22K	5%	1/6W
R227	1-247-871-00	CARBON	47K	5%	1/6W
R228	1-247-831-00	CARBON	1K	5%	1/6W
R230	1-247-871-00	CARBON	47K	5%	1/6W
R231	1-247-871-00	CARBON	47K	5%	1/6W
R232	1-247-871-00	CARBON	47K	5%	1/6W
R234	1-247-855-00	CARBON	10K	5%	1/6W

Ref.No	Part NO.	Description				Remark
R235	1-247-855-00	CARBON	10K	5%	1/6W	
R237	1-247-871-00	CARBON	47K	5%	1/6W	
R238	1-247-855-00	CARBON	10K	5%	1/6W	
R239	1-247-871-00	CARBON	47K	5%	1/6W	
R241	1-213-125-00	METAL OXIDE	33	5%	1W	F
R242	1-247-855-00	CARBON	10K	5%	1/6W	
R243	1-247-855-00	CARBON	10K	5%	1/6W	
R246	1-247-851-00	CARBON	6.8K	5%	1/6W	
R250	1-213-124-00	METAL OXIDE	27	5%	1W	F
R251	1-247-871-00	CARBON	47K	5%	1/6W	
R507	1-247-851-00	CARBON	6.8K	5%	1/6W	
R508	1-247-855-00	CARBON	10K	5%	1/6W	
R509	1-247-863-00	CARBON	22K	5%	1/6W	
R510	1-247-903-00	CARBON	1M	5%	1/6W	
R511	1-247-863-00	CARBON	22K	5%	1/6W	
R512	1-247-863-00	CARBON	22K	5%	1/6W	
R513	1-247-863-00	CARBON	22K	5%	1/6W	
R514	1-247-863-00	CARBON	22K	5%	1/6W	
R515	1-247-863-00	CARBON	22K	5%	1/6W	
R516	1-247-855-00	CARBON	10K	5%	1/6W	
R517	1-247-863-00	CARBON	22K	5%	1/6W	
R518	1-247-863-00	CARBON	22K	5%	1/6W	
R521	1-247-863-00	CARBON	22K	5%	1/6W	
R522	1-247-831-00	CARBON	1K	5%	1/6W	
R523	1-247-831-00	CARBON	1K	5%	1/6W	
R524	1-247-831-00	CARBON	1K	5%	1/6W	
R525	1-247-855-00	CARBON	10K	5%	1/6W	
R526	1-247-863-00	CARBON	22K	5%	1/6W	

CRYSTAL

X201	1-527-532-31	OSCILLATOR, CERAMIC
X501	1-527-532-31	OSCILLATOR, CERAMIC

****

♣:1-613-306-11 HN-2 BOARD
****

CONNECTOR

CN901	1-507-500-00	2P PIN JACK

DIODE

D901	8-719-118-07	DIODE RD18E-B

****

When indicating parts by reference number, please include the board name.

TP-38 HP-9 HN-1 POWER BLOCK

●:1-613-312-11 TP-38 BOARD
****

CONNECTOR

Ref.No	Part NO.	Description	Remark
CN301●:	1-560-467-00	PIN, CONNECTOR 4P	
CN302●:	1-560-469-00	PIN, CONNECTOR 6P	
CN303●:	1-560-456-00	PIN, CONNECTOR 2P	
CN304●:	1-560-456-00	PIN, CONNECTOR 2P	
CN305●:	1-560-456-00	PIN, CONNECTOR 2P	
CN306●:	1-560-456-00	PIN, CONNECTOR 2P	
CN307●:	1-560-456-00	PIN, CONNECTOR 2P	

DIODE

Ref.No	Part NO.	Description	Remark
D301	8-719-113-07	DIODE RD13E-B	
D302	8-719-113-07	DIODE RD13E-B	
D303	8-719-113-07	DIODE RD13E-B	
D304	8-719-113-07	DIODE RD13E-B	
D305	8-719-118-07	DIODE RD18E-B	
D306	8-719-118-07	DIODE RD18E-B	

RESISTOR

Ref.No	Part NO.	Description				Remark
R301	1-213-127-00	METAL OXIDE	47	5%	1W	F
R302	1-213-127-00	METAL OXIDE	47	5%	1W	F

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●:1-613-313-11 HP-9 BOARD
****

CONNECTOR

Ref.No	Part NO.	Description	Remark
CN502	1-507-808-00	JACK, LARGE TYPE	

DIODE

Ref.No	Part NO.	Description	Remark
D501	8-719-907-29	DIODE EQA11-09A	
D502	8-719-907-29	DIODE EQA11-09A	
D503	8-719-113-07	DIODE RD13E-B	

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●:1-613-305-11 HN-1 BOARD
****

CAPACITOR

Ref.No	Part NO.	Description				Remark
C701	1-123-612-00	ELECT	2.2MF	20%	50V	
C702	1-123-619-00	ELECT	4.7MF	20%	50V	
C703	1-123-612-00	ELECT	2.2MF	20%	50V	
C704	1-123-617-00	ELECT	10MF	20%	16V	
C705	1-123-612-00	ELECT	2.2MF	20%	50V	

CONNECTOR

Ref.No	Part NO.	Description	Remark
CN701●:	1-560-470-00	PIN, CONNECTOR 8P	
CN702●:	1-564-187-00	PIN, CONNECTOR	

DIODE

Ref.No	Part NO.	Description	Remark
D701	8-719-911-19	DIODE 1SS119	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-911-19	DIODE 1SS119	
D704	8-719-911-19	DIODE 1SS119	
D705	8-719-911-19	DIODE 1SS119	
D706	8-719-911-19	DIODE 1SS119	
D707	8-719-911-19	DIODE 1SS119	
D708	8-719-911-19	DIODE 1SS119	
D709	8-719-911-19	DIODE 1SS119	
D710	8-719-911-19	DIODE 1SS119	

IC

Ref.No	Part NO.	Description	Remark
IC701	8-759-240-11	IC TC4011BP	

TRANSISTOR

Ref.No	Part NO.	Description	Remark
Q701	=>8-729-245-83	TRANSISTOR 2SC2458	
Q703	=>8-729-245-83	TRANSISTOR 2SC2458	
Q704	8-729-900-89	TRANSISTOR DTC144ES	

RESISTOR

Ref.No	Part NO.	Description				Remark
R701	1-247-862-00	CARBON	20K	5%	1/6W	
R702	1-247-871-00	CARBON	47K	5%	1/6W	
R703	1-247-873-00	CARBON	56K	5%	1/6W	
R704	1-247-873-00	CARBON	56K	5%	1/6W	
R705	1-247-855-00	CARBON	10K	5%	1/6W	
R708	1-247-871-00	CARBON	47K	5%	1/6W	
R709	1-247-875-00	CARBON	68K	5%	1/6W	
R710	1-247-883-00	CARBON	150K	5%	1/6W	
R711	1-247-871-00	CARBON	47K	5%	1/6W	
R712	1-247-873-00	CARBON	56K	5%	1/6W	
R713	1-247-883-00	CARBON	150K	5%	1/6W	

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⚠.1-413-182-11 POWER BLOCK (SR-11UP)
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⚠.1-533-037-21 HOLDER, FUSE

⚠.●:1-593-678-11 C BOARD
****

CAPACITOR

Ref.No	Part NO.	Description			Remark
C681	⚠.1-130-027-00	POLYPROPYELENE	0.0056MF	50V	
C682	⚠.1-130-021-00	POLYPROPYELENE	0.0018MF	50V	
C683	⚠.1-130-026-00	POLYPROPYELENE	0.0047MF	50V	
C684	⚠.1-123-318-00	ELECT	33MF	16V	
C685	⚠.1-123-320-00	ELECT	100MF	16V	

DIODE

Ref.No	Part NO.	Description	Remark
D681	⚠.8-719-815-55	DIODE 1S1555	
D682	⚠.8-719-100-35	DIODE RD5.6E-B2	
D683	⚠.8-719-100-68	DIODE RD13E-B2	
D684	⚠.8-719-100-87	DIODE RD22E-B3	
D685	⚠.8-719-200-02	DIODE 10E2	

NOTE:

> The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

> When indicating parts by reference number, please include the board name.

POWER BLOCK

Ref.No	Part No.	Description			Remark
		IC			
IC681	⚠.8-759-937-59	IC MB3759			
		TRANSISTOR			
Q681	⚠.8-729-117-54	TRANSISTOR 2SA1175			
Q682	⚠.8-729-178-54	TRANSISTOR 2SC2785			
		RESISTOR			
R681	⚠.1-247-843-00	CARBON	3.3K	1/8W	
R682	⚠.1-247-831-00	CARBON	1K	1/8W	
R683	⚠.1-247-843-00	CARBON	3.3K	1/8W	
R684	⚠.1-247-861-00	CARBON	18K	1/8W	
R685	⚠.1-247-839-00	CARBON	2.2K	1/8W	
R686	⚠.1-247-867-00	CARBON	33K	1/8W	
R687	⚠.1-247-827-00	CARBON	680	1/8W	
R688	⚠.1-247-845-00	CARBON	3.9K	1/8W	
R689	⚠.1-247-839-00	CARBON	2.2K	1/8W	
R690	⚠.1-247-845-00	CARBON	3.9K	1/8W	
R691	⚠.1-247-851-00	CARBON	6.8K	1/8W	
R692	⚠.1-247-831-00	CARBON	1K	1/8W	
R693	⚠.1-247-855-00	CARBON	10K	1/8W	
R694	⚠.1-247-861-00	CARBON	18K	1/8W	
R695	⚠.1-247-861-00	CARBON	18K	1/8W	
		VARIABLE RESISTOR			
RV681	⚠.1-228-141-00	RES, ADJ, METAL GLAZE 500			

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	⚠.•:1-613-361-11	D BOARD *******			
	⚠.1-464-180-11	CONVERTER UINT, DC-DC (CD-06)			
		CAPACITOR			
C651	⚠.1-123-324-00	ELECT	1000MF	16V	
C652	⚠.1-123-324-00	ELECT	1000MF	16V	
C653	⚠.1-125-310-00	ELECT	470MF	16V	
C654	⚠.1-123-324-00	ELECT	1000MF	16V	
C655	⚠.1-123-319-00	ELECT	47MF	16V	
C656	⚠.1-123-319-00	ELECT	47MF	16V	
C657	⚠.1-125-310-00	ELECT	470MF	16V	
C658	⚠.1-123-320-00	ELECT	100MF	16V	
C659	⚠.1-125-310-00	ELECT	470MF	16V	
C660	⚠.1-123-320-00	ELECT	100MF	16V	
		DIODE			
D651	⚠.8-719-815-85	DIODE 1S1585			
D652	⚠.8-719-100-23	DIODE RD4.3E-B2			
D653	⚠.8-719-815-55	DIODE 1S1555			
D654	⚠.8-719-815-55	DIODE 1S1555			
D655	⚠.8-719-911-55	DIODE U05G			
		IC			
IC651	⚠.8-759-171-08	IC UPC7808H			

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description			Remark
		COIL			
L651	⚠.1-408-933-00	CHOKE, COIL			
L652	⚠.1-408-454-00	MICRO INDUCTOR 100UH			
L653	⚠.1-421-421-00	CHOKE, COIL 100UH			
		IC LINK			
PS651	⚠.1-532-637-11	LINK, IC (ICP-N20)			
		TRANSISTOR			
Q651	⚠.8-729-117-54	TRANSISTOR 2SA1175			
Q652	⚠.8-729-178-54	TRANSISTOR 2SC2785			
		RESISTOR			
R651	⚠.1-246-489-00	CARBON	4.7K	1/4W	
R652	⚠.1-246-497-00	CARBON	10K	1/4W	
R653	⚠.1-246-481-00	CARBON	2.2K	1/4W	
R654	⚠.1-246-489-00	CARBON	4.7K	1/4W	
R655	⚠.1-246-465-00	CARBON	470	1/4W	
R656	⚠.1-246-481-00	CARBON	2.2K	1/4W	
R657	⚠.1-213-137-00	METAL OXIDE	330	1W	F
		VARIABLE RESISTOR			
RV651	⚠.1-228-141-00	RES, ADJ, METAL GLAZE 500			
		RELAY			
RY651	⚠.1-515-481-11	RELAY 12V 5A			

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	⚠.•:1-593-680-11	F BOARD *******			
		CAPACITOR			
C601	⚠.1-130-711-00	METALLIZED POLYESTER	0.22MF	250V	
C602	⚠.1-130-711-00	METALLIZED POLYESTER	0.22MF	250V	
C603	⚠.1-161-742-00	CERAMIC	0.0022MF	400V	
C604	⚠.1-161-742-00	CERAMIC	0.0022MF	400V	
C605	⚠.1-161-742-00	CERAMIC	0.0022MF	400V	
C606	⚠.1-161-743-00	CERAMIC	0.0047MF	400V	
C607	⚠.1-161-743-00	CERAMIC	0.0047MF	400V	
C608	⚠.1-161-742-00	CERAMIC	0.0022MF	400V	
		DIODE			
D601	⚠.8-719-503-06	DIODE S3WB60Z			
		FUSE			
F601	⚠.1-532-237-11	FUSE, TIME-LAG 3.15A 200V			
		RESISTOR			
R601	⚠.1-217-292-00	WIRE WOUND	3.3	5W	F
		SWITCH			
SW601	⚠.1-553-834-11	PUSH SW (POWER)			
		TRANSFORMER			
T601	⚠.1-421-481-21	LFT			

POWER BLOCK

Ref.No.	Part No.	Description			Remark
	⚠.●:1-607-789-11	M BOARD *******			

CAPACITOR

C611	⚠.1-125-311-00	ELECT	220MF	400V	
C612	⚠.1-124-023-00	ELECT	4.7MF	350V	
C613	⚠.1-124-023-00	ELECT	4.7MF	350V	
C614	⚠.1-124-162-00	ELECT	47MF	10V	
C615	⚠.1-124-162-00	ELECT	47MF	10V	
C631	⚠.1-161-910-00	CERAMIC	390PF	500V	
C632	⚠.1-161-910-00	CERAMIC	390PF	500V	
C633	⚠.1-108-409-00	POLYESTER	0.001MF	200V	
C634	⚠.1-123-385-00	ELECT	22MF	100V	
C635	⚠.1-123-324-00	ELECT	1000MF	16V	
C636	⚠.1-123-850-00	ELECT	1000MF	16V	
C638	⚠.1-161-915-00	CERAMIC	0.001MF	500V	
C639	⚠.1-130-516-00	POLYESTER	0.01MF	50V	
C640	⚠.1-130-520-00	POLYESTER	0.022MF	50V	
C642	⚠.1-108-389-00	POLYESTER	0.1MF	100V	
C643	⚠.1-161-910-00	CERAMIC	390PF	500V	
C644	⚠.1-161-910-00	CERAMIC	390PF	500V	

DIODE

D631	⚠.8-719-902-43	DIODE ESAD33-02CS
D632	⚠.8-719-300-27	DIODE CTU-22S
D634	⚠.8-719-900-93	DIODE V09C
D635	⚠.8-719-100-14	DIODE RD3.0E-B1
D636	⚠.8-719-100-14	DIODE RD3.0E-B1
D637	⚠.8-719-100-44	DIODE RD7.5E-B2
D638	⚠.8-719-100-57	DIODE RD10E-B2
D639	⚠.8-719-815-85	DIODE 1S1585
D640	⚠.8-719-815-55	DIODE 1S1555

COIL

L631	⚠.1-421-545-00	CHOKE, COIL
L632	⚠.1-421-546-00	CHOKE, COIL
L633	⚠.1-421-547-00	CHOKE, COIL
L634	⚠.1-421-329-00	CHOKE, COIL
L635	⚠.1-421-421-00	CHOKE, COIL 100UH

TRANSISTOR

Q611	⚠.X-3681-138-1	TRANSISTOR 2SC3158
Q612	⚠.X-3681-138-1	TRANSISTOR 2SC3158
Q613	⚠.8-729-102-03	TRANSISTOR 2SD1020
Q614	⚠.8-729-102-03	TRANSISTOR 2SD1020
Q631	⚠.8-729-103-43	TRANSISTOR 2SB734
Q632	⚠.8-729-306-72	TRANSISTOR 2SD667A

RESISTOR

R611	⚠.1-246-535-00	CARBON	390K	1/4W	
R612	⚠.1-246-535-00	CARBON	390K	1/4W	
R613	⚠.1-212-946-00	FUSIBLE	3.3	1/2W	F
R614	⚠.1-212-946-00	FUSIBLE	3.3	1/2W	F
R615	⚠.1-246-449-00	CARBON	100	1/4W	
R616	⚠.1-246-449-00	CARBON	100	1/4W	
R631	⚠.1-206-475-00	METAL OXIDE	33	2W	F
R632	⚠.1-247-923-00	CARBON	8.2	1/4W	F
R633	⚠.1-535-363-00	SHUNT	0.02	2W	F
R634	⚠.1-246-485-00	CARBON	3.3K	1/4W	
R635	⚠.1-246-473-00	CARBON	1K	1/4W	
R636	⚠.1-246-453-00	CARBON	150	1/4W	
R637	⚠.1-246-401-00	CARBON	1	1/4W	
R638	⚠.1-246-473-00	CARBON	1K	1/4W	
R639	⚠.1-246-485-00	CARBON	3.3K	1/4W	
R640	⚠.1-244-893-00	CARBON	6.8K	1/4W	

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

TRANSFORMER

T611	⚠.1-421-486-12	CHOKE COIL, COMMON
T612	⚠.1-447-282-11	CONV. T
T613	⚠.1-437-120-11	DR. T

****

MISCELLANEOUS
****

	⚠.1-413-182-11	POWER BLOCK (SR-11UP)
	1-520-474-11	METER, LEBEL
	⚠.1-534-817-12	CORD, POWER
	●:1-535-531-21	TERMINAL, GROUND
	●:1-535-532-11	TERMINAL, CHECK
	1-548-131-00	COUNTER, INTEGRATING
	8-825-508-10	HEAD, FE
D501	8-719-902-96	DIODE GL-430
L901	1-235-054-00	COIL, SENSOR, S
L902	1-235-055-31	COIL SENSOR, T
M902	8-838-027-12	MOTOR, DC (BHF-1901B)(CAPSTAN)
M903	8-838-021-21	MOTOR, DC (BHF-1800C)(REEL)
M904	A-6737-090-A	MOTOR ASSY, L
PM901	⚠.1-454-281-31	SOLENOID, PLUNGER (BRAKE)
PM902	⚠.1-454-282-12	SOLENOID, PLUNGER (PINCH)
Q501	8-729-900-19	TRANSISTOR PT-430F
S902	1-553-718-00	SWITCH, MICRO (CASSETTE IN)
S903	1-553-539-00	SWITCH, MICRO (LOADING END)
S904	1-553-718-00	SWITCH, MICRO (UNLOADING END)

****

ACCESSORIES AND PACKING MATERIALS
****

Part No.	Description	Remark
●:3-677-503-00	SHEET, PROTECTION	
3-687-235-01	COVER, CONTROL KNOB, REC	
●:3-687-310-01	INDIVIDUAL CARTON	
●:3-687-311-01	PARTITION	
●:3-687-312-01	CUSHION (UPPER)	
●:3-687-313-01	CUSHION (LOWER)	
3-701-630-00	BAG, POLYETHYLENE	
3-760-077-11	MANUAL, INSTRUCTION	
3-760-077-41	MANUAL, INSTRUCTION	

****

ADJUSTMENT

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SECTION 1
PREPARATION FOR MECHANICAL SECTION CHECK, ADJUSTMENT, AND REPLACEMENT

1-1. REMOVAL OF THE UPPER CASE AND FRONT PANEL

1) Remove the two screws ①.
2) Remove the cover assembly ②.
3) Remove the three screws ③.
4) Remove the upper case ④ in the direction shown by the arrow Ⓐ.
5) Remove the four screws ⑤.
6) Remove the left side plate ⑥ and right side plate ⑦.
7) Remove the seven screws ⑧.
8) Remove the lower case ⑨.
9) Remove the five screws ⑩.
10) Remove the front panel ⑪.
11) Remove the five screws ⑫.
12) Remove the integrating counter ⑬ and TP-38 block assembly ⑭.

Note: Hang removed TP-38 block assembly ⑭ onto the hooks ⑮ of front chassis.

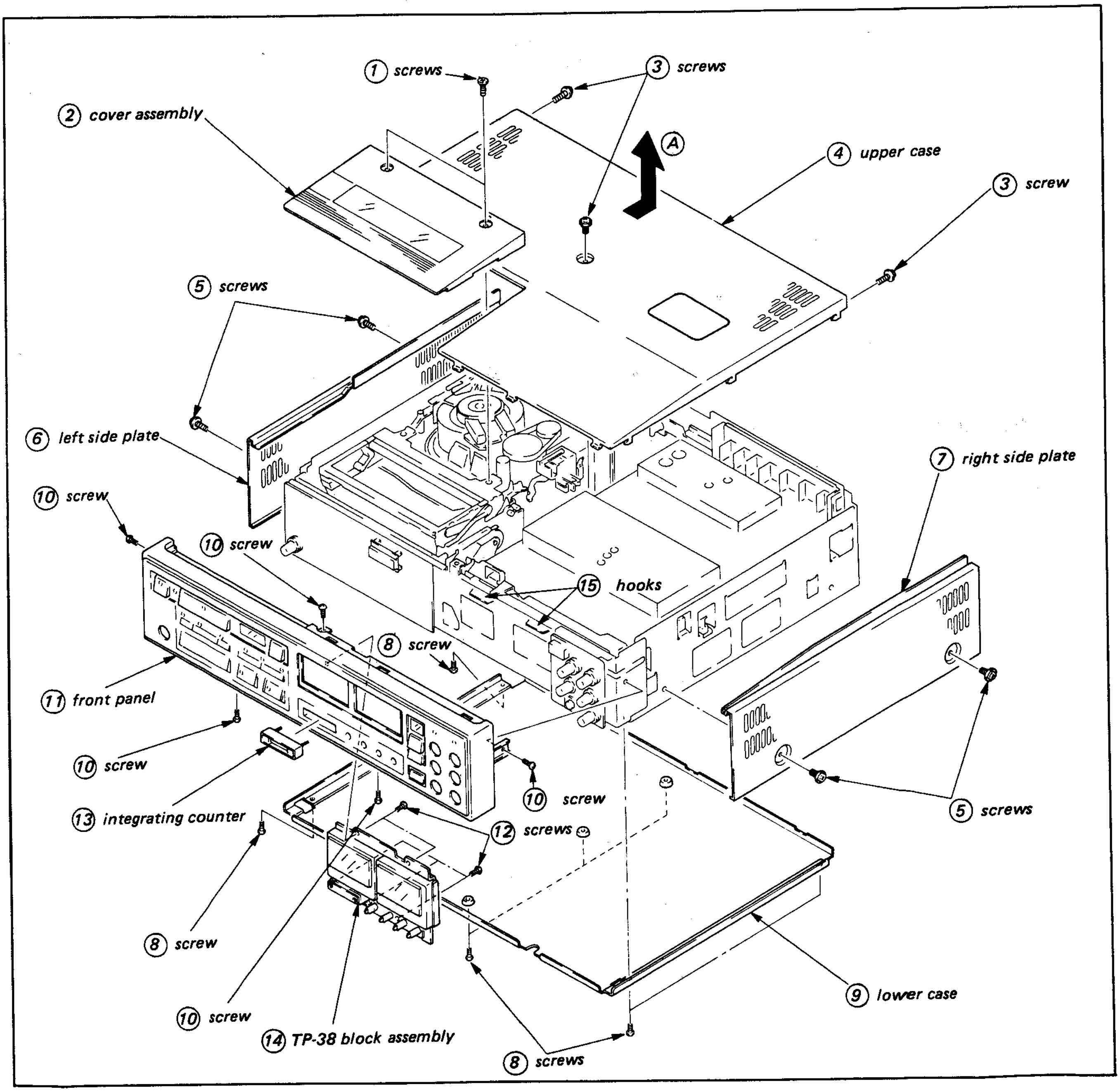

① screws
③ screws
② cover assembly
Ⓐ
④ upper case
③ screw
⑤ screws
⑥ left side plate
⑩ screw
⑦ right side plate
⑩ screw
⑮ hooks
⑧ screw
⑪ front panel
⑩ screw
⑬ integrating counter
⑩ screw
⑫ screws
⑤ screws
⑧ screw
⑩ screw
⑭ TP-38 block assembly
⑧ screws
⑨ lower case

Fig. 1-1. Removal of the Upper Case and Front Panel

1-2. REMOVAL OF THE RP-18 BOARD AND AF-3P BOARD

1) Remove the four screws ①.
2) Remove the claw of pc board holder ② and the RP-18 board in the direction shown by the arrow Ⓐ.
3) Remove the four screws ③.
4) Remove the claw of pc board holder ④.
5) Remove the AF-3P board in the direction shown by the arrow Ⓑ.

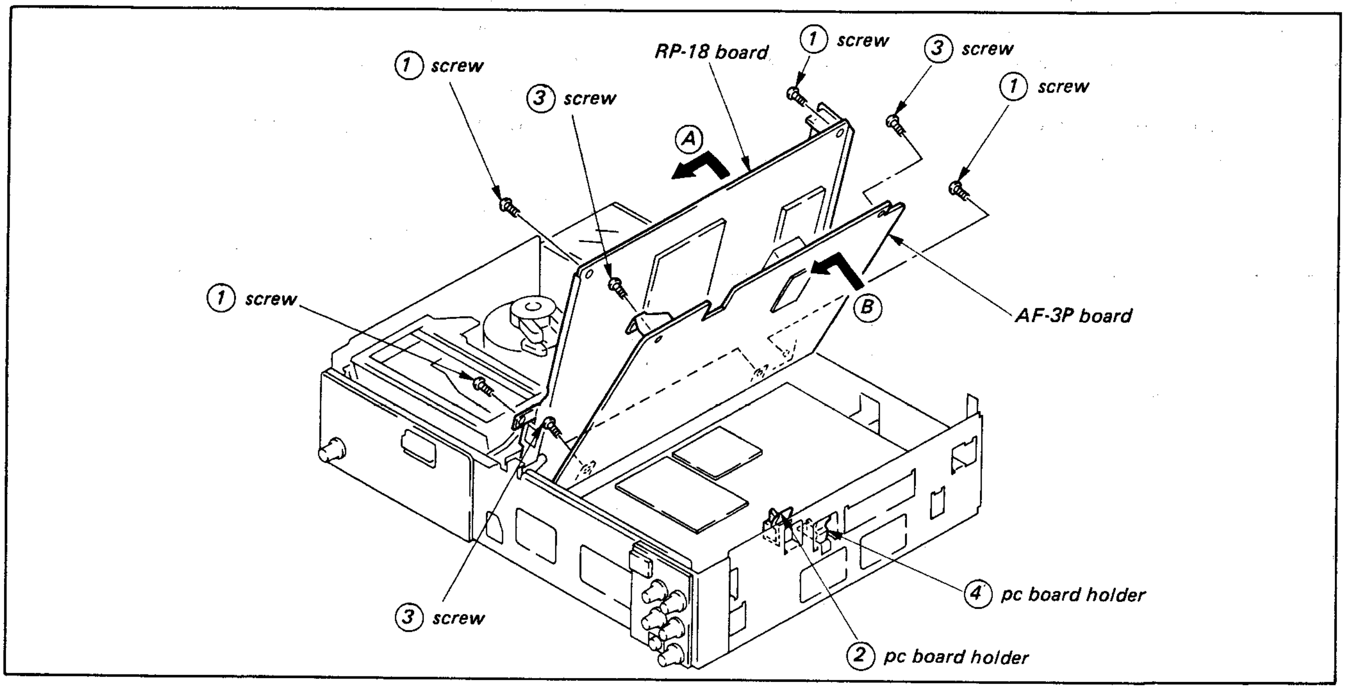

RP-18 board
① screw
③ screw
① screw
③ screw
① screw
Ⓐ
① screw
Ⓑ
AF-3P board
④ pc board holder
③ screw
② pc board holder

Fig. 1-2. Removal of the RP-18 Board and AF-3P Board

1-3. REMOVAL OF THE RR-5 BOARD

1) Open the RP-18 board in the direction shown by the arrow Ⓐ.
2) Pull out the four connectors ① from the SS-29 board.
3) Remove the two screws ②.
4) Remove the RR-5 board ③.

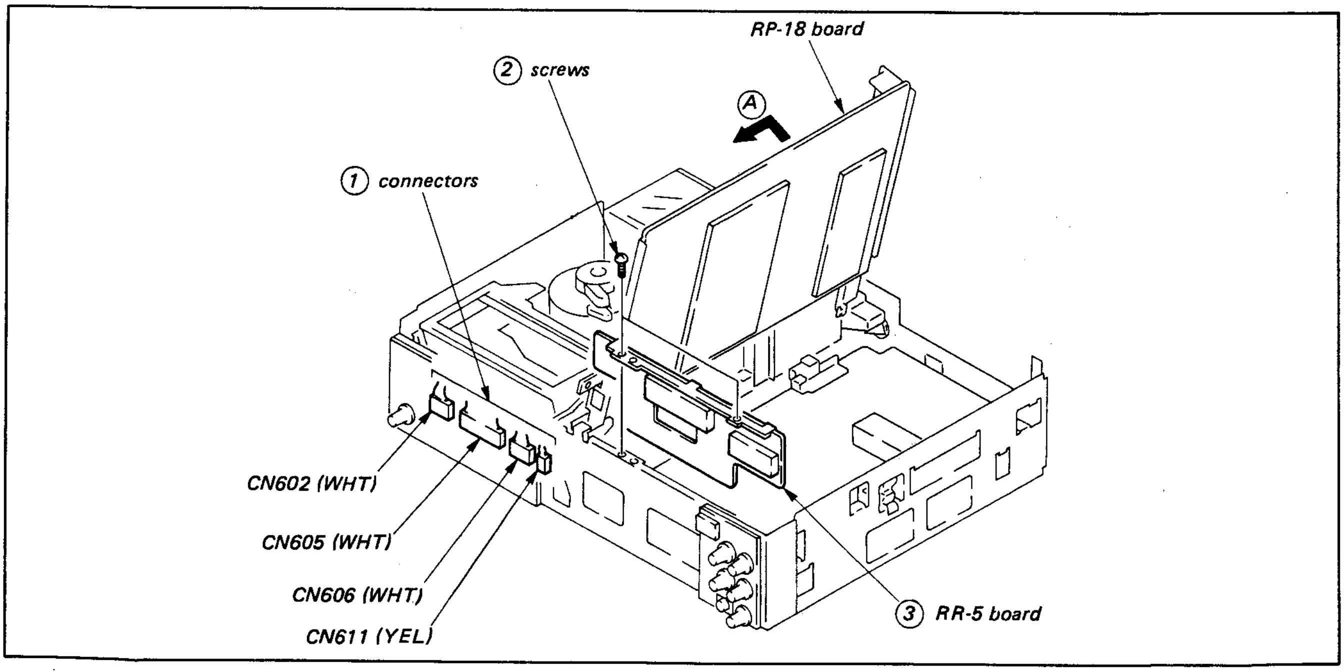

RP-18 board
② screws
Ⓐ
① connectors
CN602 (WHT)
CN605 (WHT)
CN606 (WHT)
CN611 (YEL)
③ RR-5 board

Fig. 1-3. Removal of the RR-5 Board

1-4. REMOVAL OF THE MECHANICAL CHASSIS BLOCK ASSEMBLY

1-4-1. Removal of the RV-7P Board

1) Stand the set with the left side panel on the bottom.
2) Remove the four screws ①.
3) Remove the RV-7P board in the direction shown by the arrow Ⓐ and rest it on a cassette.
4) Pull out the three connectors ② from the AM-6 board.

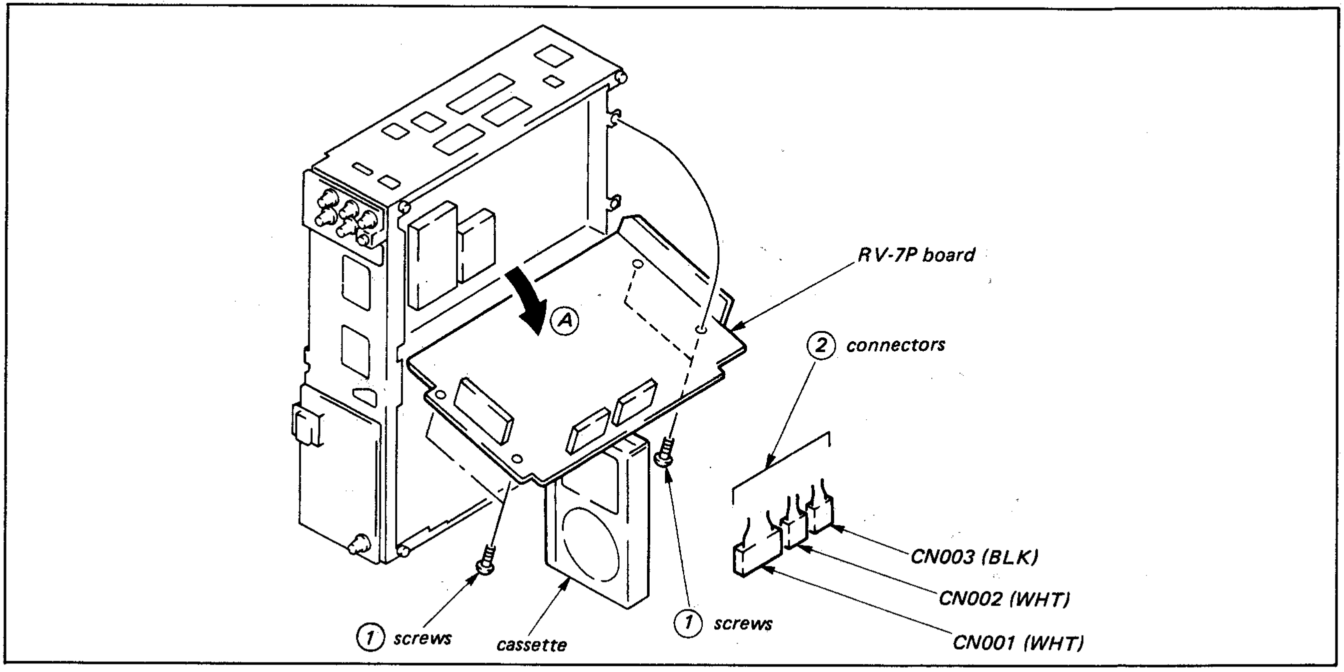

RV-7P board
Ⓐ
② connectors
CN003 (BLK)
CN002 (WHT)
CN001 (WHT)
① screws
cassette
① screws

Fig. 1-4. Removal of the RV-7P Board

1-4-2. Removal of the SS-29 Board

1) Stand the set with the right side panel on the bottom.
2) Remove the four screws ①.
3) Remove the SS-29 board in the direction shown by the arrow Ⓐ and rest it on a cassette.
4) Pull out the eleven connectors ② from the SS-29 board.

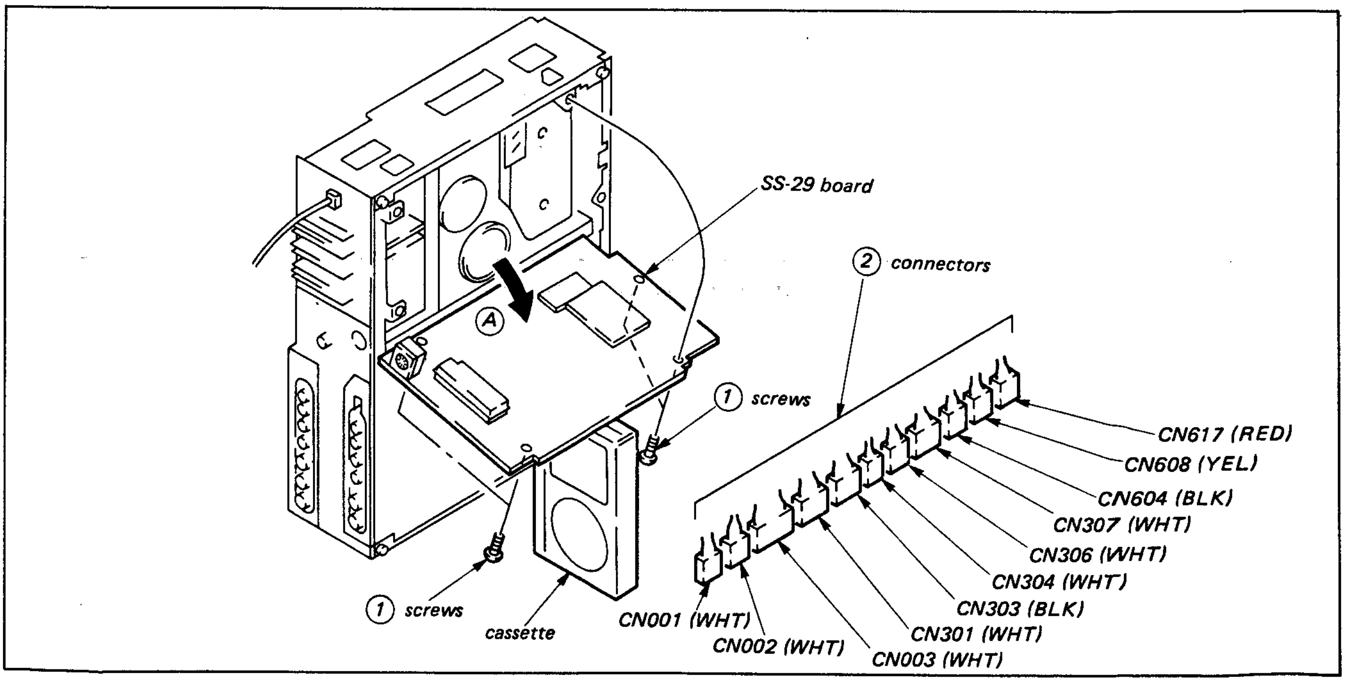

SS-29 board
② connectors
Ⓐ
① screws
CN617 (RED)
CN608 (YEL)
CN604 (BLK)
CN307 (WHT)
CN306 (WHT)
CN304 (WHT)
CN303 (BLK)
CN301 (WHT)
CN003 (WHT)
CN002 (WHT)
CN001 (WHT)
① screws
cassette

Fig. 1-5. Removal of the SS-29 Board

1-4-3. Removal of the Mechanical Chassis Block Assembly

1) Pull out the connectors ① from the RP-18 board.
2) Pull out the connectors ② from the RL-19 board.
3) Remove the five screws ③.
4) Remove the mechanical chassis block assembly.

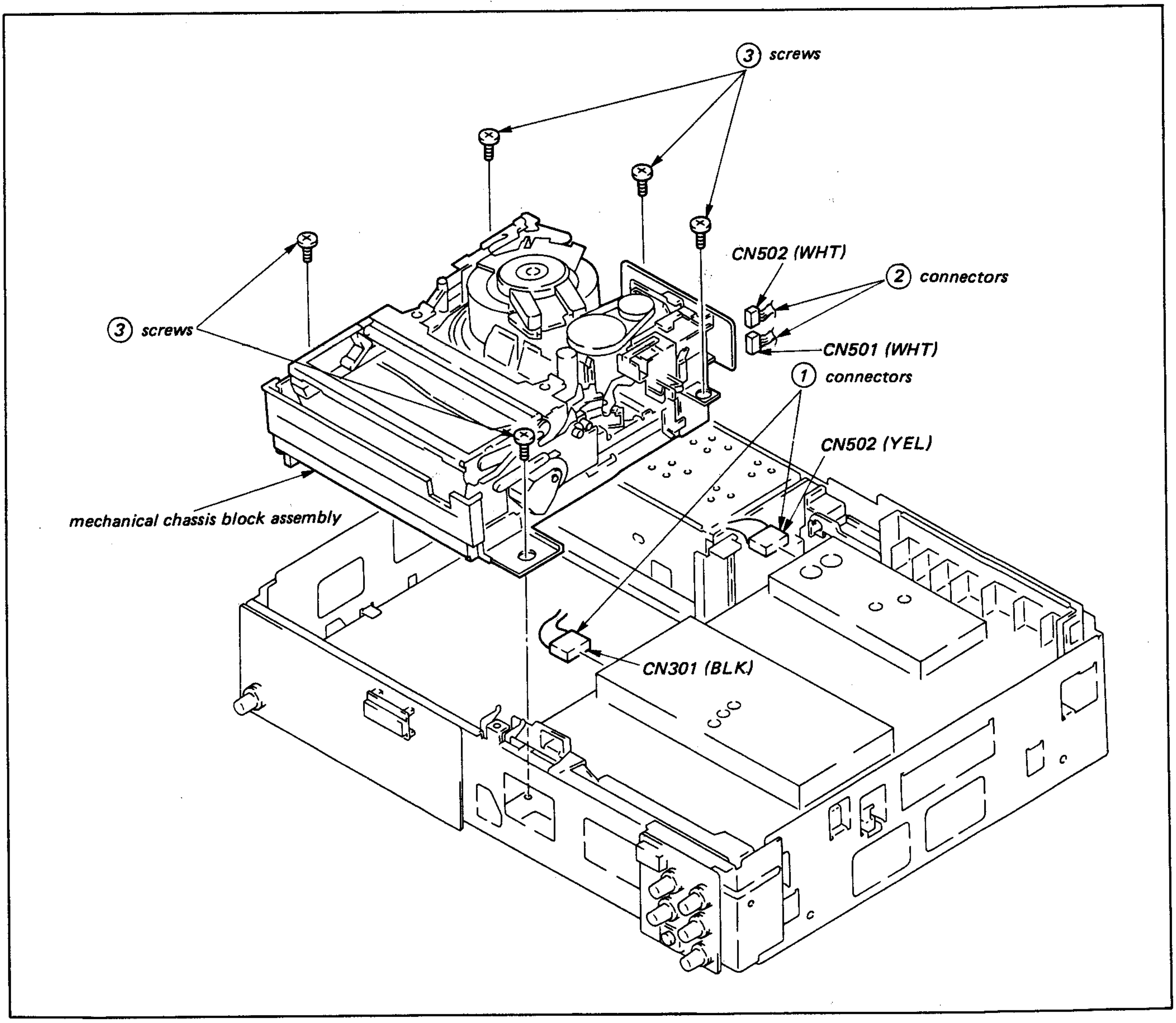

③ screws
③ screws
CN502 (WHT)
② connectors
CN501 (WHT)
① connectors
CN502 (YEL)
mechanical chassis block assembly
CN301 (BLK)

Fig. 1-6. Removal of the Mechanical Chassis Block Assembly

1-5. REMOVAL OF THE REEL ASSEMBLY

1) Place the set upside down.
2) Remove the five screws ①.
3) Remove the reel assembly ②.

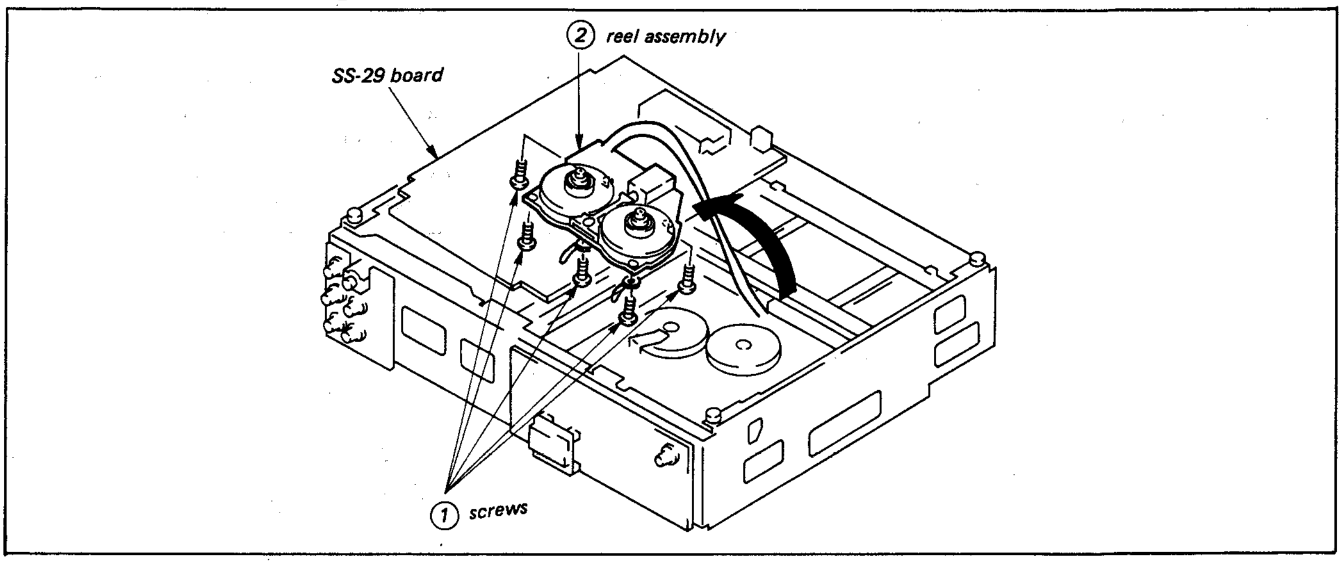

② reel assembly
SS-29 board
① screws

Fig. 1-7. Removal of the Reel Assembly

1-6. REMOVAL OF THE POWER BLOCK ASSEMBLY

1) Open the RP-18 board ① in the direction shown by the arrow Ⓐ.
2) Disconnect part Ⓑ.
3) Remove the five screws ②.
4) Remove the rear panel ③.
5) Pull out the six connectors ④ from the D board.
6) Remove the six screws ⑤.
7) Remove the power block assembly ⑥.

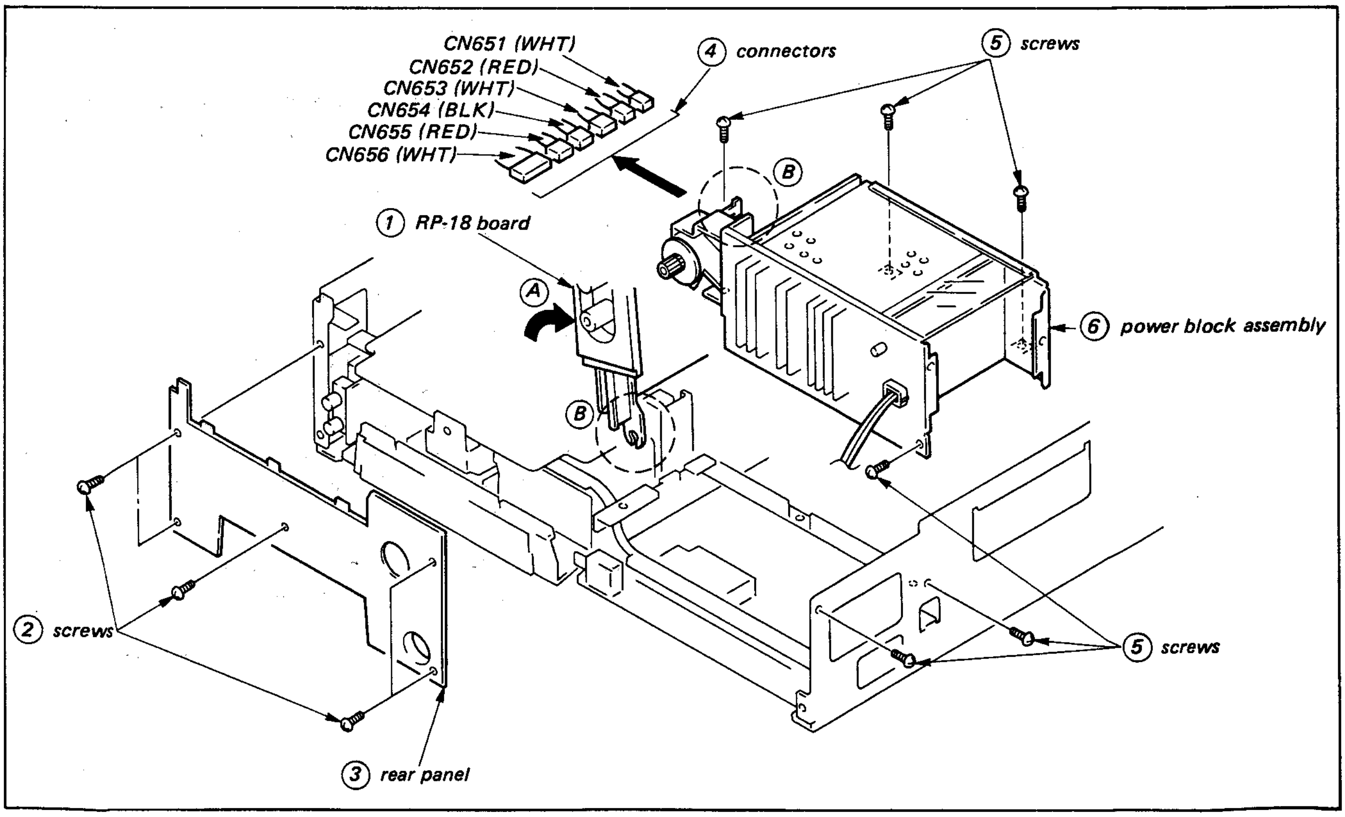

CN651 (WHT)
CN652 (RED)
CN653 (WHT)
CN654 (BLK)
CN655 (RED)
CN656 (WHT)
④ connectors
⑤ screws
Ⓑ
① RP-18 board
Ⓐ
Ⓑ
⑥ power block assembly
② screws
⑤ screws
③ rear panel

Fig. 1-8. Removal of the Power Block Assembly

1-7. MECHANICAL OPERATION WITHOUT CASSETTE INSTALLED

1-7-1. Completing Threading Without Cassette (This state is called "STOP mode" in this manual.)

1) With the cassette compartment down, press the cassette detection lever shown in Fig. 1-9. However, the tape detector will operate and cause EJECT, so first place something between the ACE head and the guide. (Fig. 1-10)

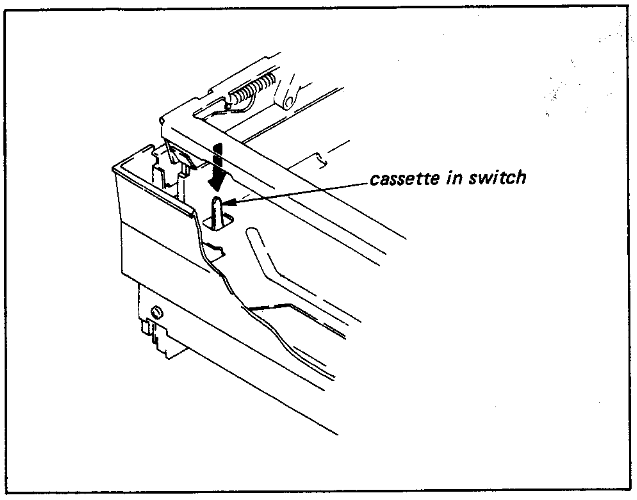


Fig. 1-9. Cassette Detection Lever

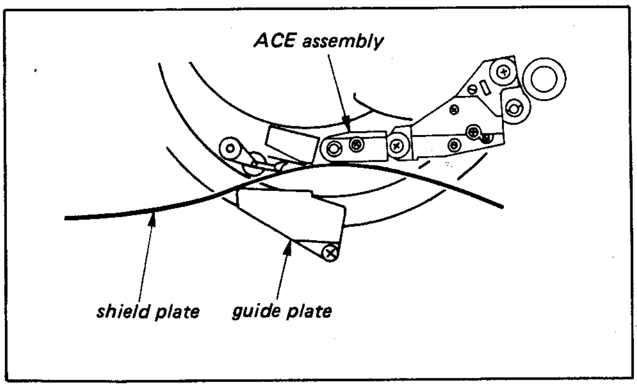


Fig. 1-10.

2) To complete threading with the cassette compartment raised, use a blade-tip screwdriver or other tool to push the cassette compartment lock shown in Fig. 1-11. This will cause the lock lever assembly to move into its forward position. Then press the cassette in lever.

Caution: After pressing eject, the lock lever will not release automatically. Therefore push the plate ass'y release and the lock lever in the direction of arrow Ⓐ to return the mechanism to its normal cassette-compartment-up state.

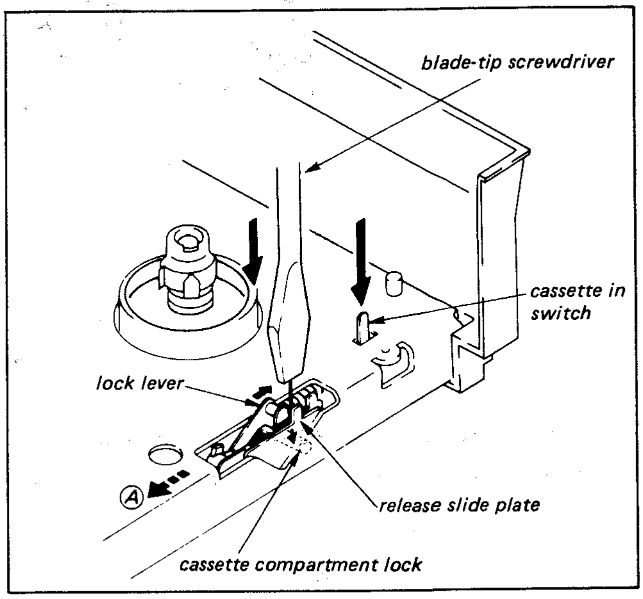


Fig. 1-11. Cassette Compartment Lock

1-7-2. Setting Playback without a Cassette, Press the Playback Button after Setting the "STOP Mode" as in Step 1-7-1.

1-7-3. Setting Record without a Cassette

1) Thread as explained in 1-7-1.
2) The pause lamp and record lamp light when the record button is pressed, and it is necessary to release pause.
REC button ON → REC PAUSE condition → PAUSE release → REC START
When setting up ONE REC condition:
Disconnect connector CN615 on SS-29 board, press the REC button, then a REC state is immediately set up.

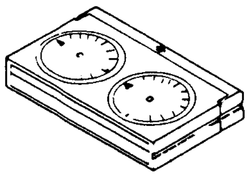
Note: 1) Fast-forward and rewind are not posible without an installed cassette.
2) To prevent incorrect erasing, cut the jumper wire on the RL-19 board, then recording will not be performed.

1-8. TOOLS AND FIXTURES REQUIRED

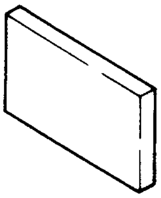
Ref. No.	Name	Part No.	Fixture No.
J-1	Forward-Back Tension Measurement Tape	J-6080-003-C	SL-0003C
J-2	Parallel Plate	J-6086-570-A	SL-0657
J-3	Small Adj. Mirror Spare Mirror	J-6080-029-A J-6080-030-1	SL-5052
J-4	Alignment Tape Alignment Tape Alignment Tape Alignment Tape	8-969-998-01 8-969-995-22 8-969-995-13 8-969-994-35	KR3-1C KR5-2C KR5-3C KR3-5D
J-5	Cleaning Fluid	Y-2031-001-0	
J-6	Thickness Gauge	9-911-053-00	
J-7	Cleaning chamois	2-034-697-00	
J-8	Head Demagnetizer		
J-9	Lapping Tape	8-888-004-00	
J-10	Dihedral Adj. Screw	J-6080-013-A	SL-0013

ITEMS J-5, J-6, J-7, J-8 can be obtainted locally

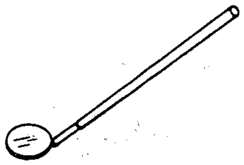
J-1



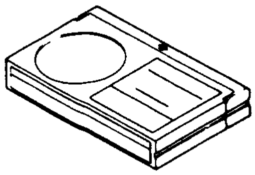
J-2



J-3

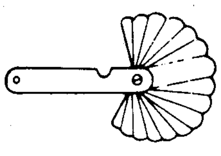


J-4



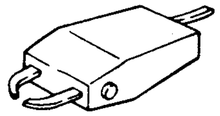
J-5

J-6

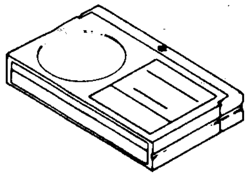


J-7

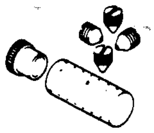
J-8



J-9



J-10



SECTION 2
PERIODIC CHECK AND MAINTENANCE

The following maintenance and periodic checks are recommended to ensure optimum machine function and performance and to prolong machine and tape life.

2-1. MAINTENANCE AFTER REPAIR

Carry out maintenance work for the following items after repairing the machine regardless of the period of use.

2-1-1. Rotary Head Disk Assembly

1) Place a piece of chamois (tool Ref. No. J7) soaked in cleaning fluid (tool Ref. No. J5) lightly against the rotary drum assembly and clean the rotary head disk assembly by slowly rotating it by hand. (Important-Do not clean by rotating with the motor on.)
2) Do not clean the head tip by moving the chamois in a vertical direction. This may damage the head tip.

2-1-2. Cleaning of the Tape Transportation System

Clean the tape contact surfaces, such as the tape guide, drum assembly surfaces, capstan, and pinch roller using cleaning piece etc. soaked in cleaning fluid.

2-1-3. Cleaning of the Drive System

Clean the driving elements (reel base surfaces, etc.) using a cloth soaked in cleaning fluid.

parts requiring cleaning

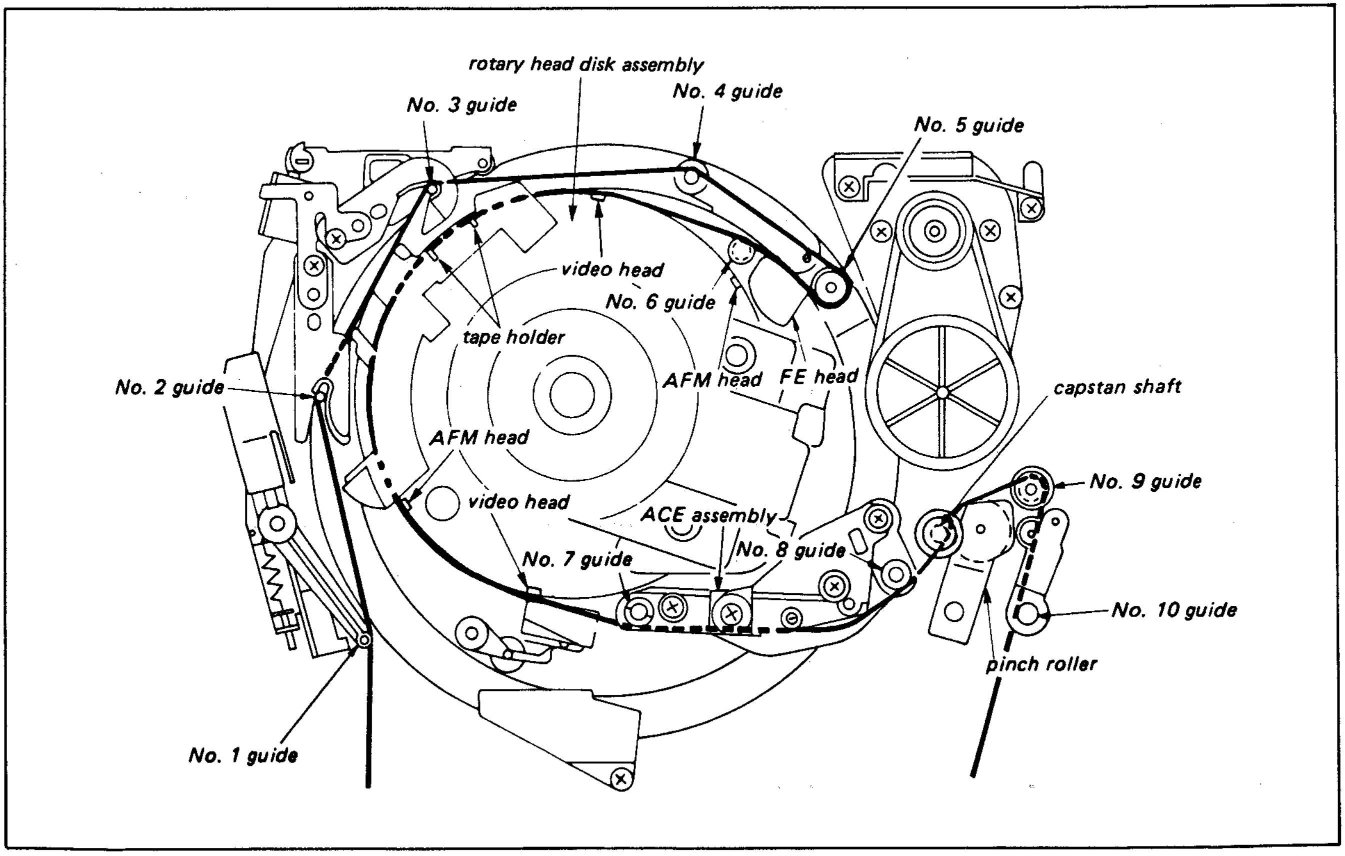

rotary head disk assembly
No. 3 guide
No. 4 guide
No. 5 guide
video head
No. 6 guide
tape holder
No. 2 guide
AFM head
FE head
capstan shaft
AFM head
No. 9 guide
video head
ACE assembly
No. 8 guide
No. 7 guide
No. 10 guide
pinch roller
No. 1 guide

Fig. 2-1. Parts requiring cleaning

2-2. PERIODIC CHECK ITEMS

Carry out maintenance checks for the following items depending on the duration of use.

Maintenance & Check		Replacement Part No.	Operating Hours (H)										Remarks
			500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Trans-Portation System	Cleaning of tape transportation system		○	○	○	○	○	○	○	○	○	○	This cleaning must be done whenever a repair is made.
	Cleaning and degaussing of ACE ass'y		○	○	○	○	○	○	○	○	○	○	
	Cleaning & degaussing of video disk ass'y		○	○	○	○	○	○	○	○	○	○	The life of the head varies, depending on operational conditions and method.
Driving System	Replacement of threading DC motor belt		○	○	○	○	○	○	○	★	○	○	• This cleaning must be done whenever a repair is made. • Replacement must be done depending on operating hours on the table, or every two years.
	Cleaning of iron core and opening of solenoid		–	–	–	○	–	–	–	○	–	–	Wipe iron core and opening of solenoid with dry cloth.
Performance Confirmation	Abnormal sound		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace the section which causes abnormal sound.
	Measurement of FWD back tension		–	☆	–	☆	–	☆	–	☆	–	☆	Confirmation must be made according to section Specified value: 45 ~ 48 g·cm (When measured with torque cassette tape)
	Confirmation of brake system		–	☆	–	☆	–	☆	–	☆	–	☆	Confirmation must be made according to section
	Confirmation of record & playback functions		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Perform the confirmation whenever repair is made.

○ Cleaning ★ Replacement ☆ Confirmation

Note: When overhauling, refer to the above for part replacement.

SECTION 3
CHECK, ADJUSTMENT, AND REPLACEMENT PROCEDURES

3-1. REPLACING ROTARY HEAD DISK ASSEMBLY

Accessory adjusting jig: Feeler gauge 1, feeler gauge 2

Note: Keep them after replacing the rotary head disk, since they will be needed when replacing the guide arm assembly and the rotary coupler assembly. (They are not delivered with the guide arm assembly or the rotary coupler assembly.)

3-1-1. Removing rotary head disk assembly

Note: While removing the rotary head disk assembly, never move screws ⑧ clamping the guide arm assembly. If they are moved, a centering adjustment will be required later. (Refer to Paragraph 3-2-3).

1) Unscrew two screws ① clamping the damper assembly, and remove the damper assembly.
2) Unscrew hex. socket head bolt ② with an Allen wrench.
3) Unscrew two screws ③ , and remove the upper drum assembly.

   Note: Remove while turning the upper drum assembly, taking care not to move the adjust plate. If the adjust plate is moved, the tape pass is badly influenced (See Fig. 3-11).
4) Unsolder the four connection pins ④ from the coupler disk.
5) Unscrew two hex. socket head bolts ⑤ , and remove the rotary coupler assembly.

   Note: To be able to refit the rotary coupler in the correct relative position, memorize the position relative to connection pins ④ .
6) Unsolder the red, white, and black leads at four positions from the intermediary board of the rotary head disk.
7) Unscrew four hex. socket head bolts ⑦ , and remove the rotary head disk assembly.

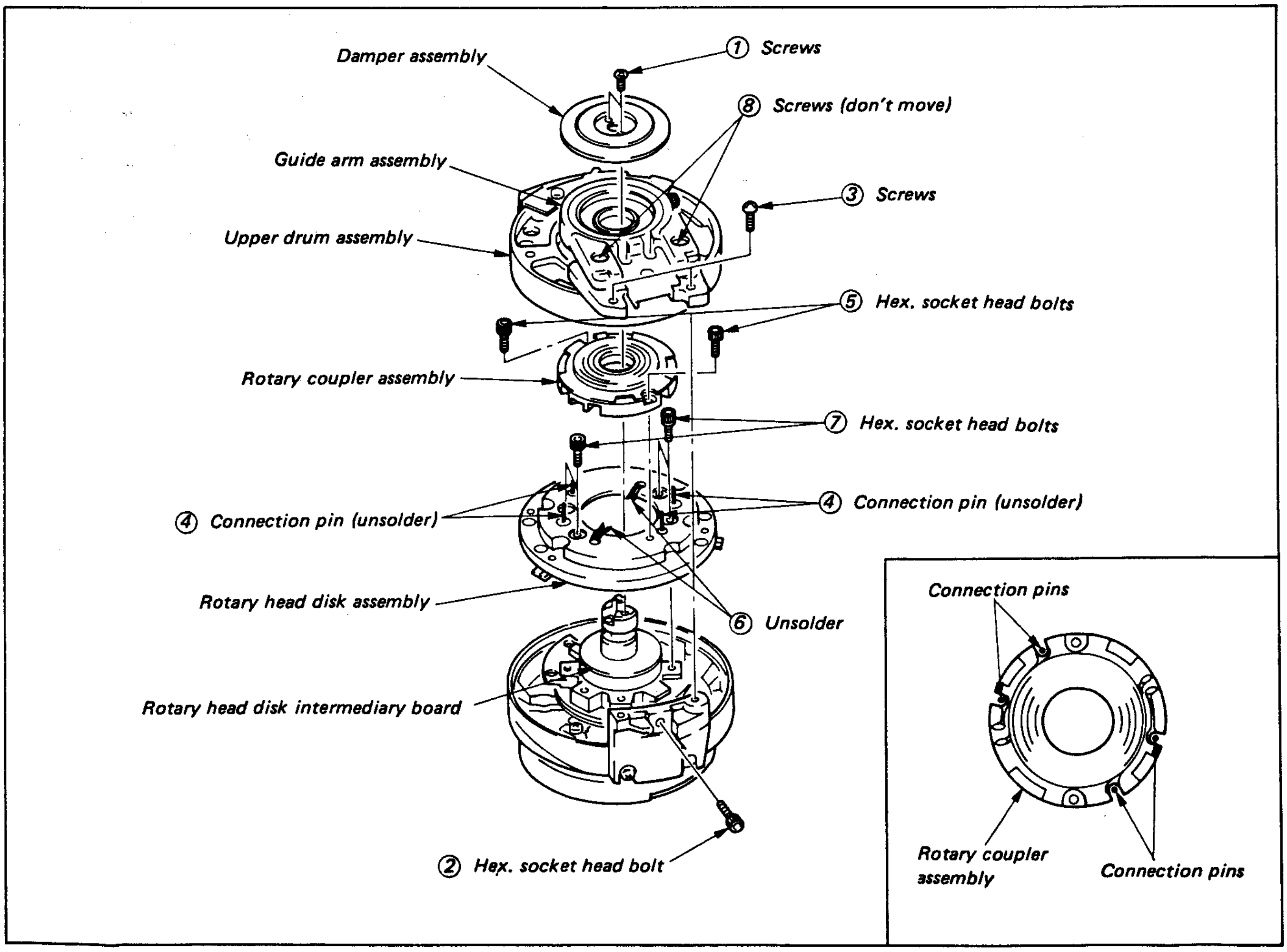

Damper assembly
① Screws
⑧ Screws (don't move)
Guide arm assembly
③ Screws
Upper drum assembly
⑤ Hex. socket head bolts
Rotary coupler assembly
⑦ Hex. socket head bolts
④ Connection pin (unsolder)
④ Connection pin (unsolder)
Rotary head disk assembly
⑥ Unsolder
Rotary head disk intermediary board
② Hex. socket head bolt
Connection pins
Rotary coupler assembly
Connection pins

Fig. 3-1 How to remove rotary head disk

3-1-2. Refitting rotary head disk assembly

Note: Be extremely careful not to damage the head chip by touching or fouling it.

1) Solder the four leads to the video head of the rotary head disk assembly. (Caution on correct orientation of the magnet.) Thread the leads through the holes (See Fig. 3-2).
2) Refit the four connection pins to the rotary head disk assembly (See Fig. 3-3).
3) Bend the connection pins and solder them to the AFM heads (See Fig. 3-3).
4) Refit the rotary head disk assembly, paying attention to the positions of the red, white, and black leads, and to the orientation of the connection pins. (White on Ach side)
5) Tighten four hex. socket head bolts ⑦ (see Fig. 3-1), and solder the leads to the intermediary board of rotary head disk (See Fig. 3-4-a).
6) Refit the rotary coupler assembly, and tighten two hex. socket head bolts ⑤ (See Fig. 3-1).

   Note: Align A-a and B-b between the intermediary board of rotary head disk and the rotary coupler assembly (See Fig. 3-4).
7) Solder the four connection pins to the rotary coupler assembly (See Fig. 3-4-b).
8) Refit the upper drum assembly without moving the adjust plate, and lightly tighten screws ③ . Tighten hex. socket head bolt ② , and then, tighten screws ③ firmly (See Fig. 3-1).

   Note: While refitting the upper drum assembly, take care not to foul the head chip.
9) Check the AFM rotary transformer gap with the feeler gauges (See Fig. 3-5). Feeler 1 must go in and feeler 2 must not go in. If the gap is incorrect, readjust the gap. (Refer to Paragraph 3-1-3).
10) Refit the damper assembly, and tighten screw ① (See Fig. 3-1).

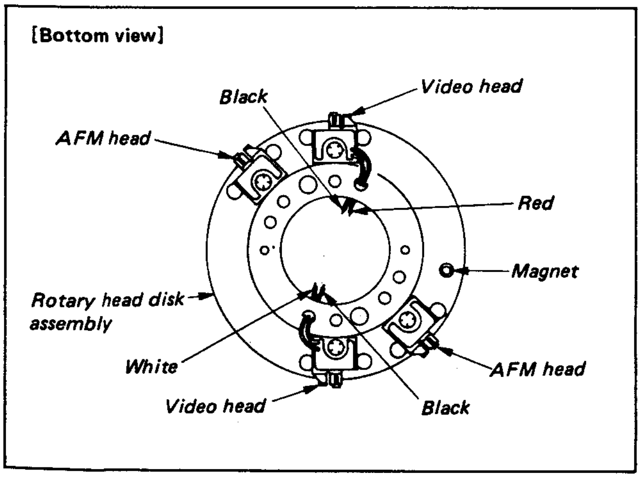

[Bottom view]
Black
Video head
AFM head
Red
Magnet
Rotary head disk assembly
White
AFM head
Video head
Black

Fig. 3-2 How to refit rotary head disk (1)

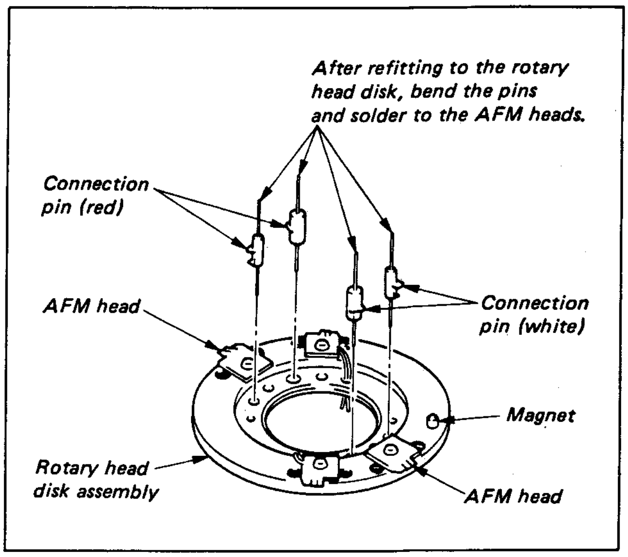

After refitting to the rotary head disk, bend the pins and solder to the AFM heads.
Connection pin (red)
AFM head
Connection pin (white)
Magnet
Rotary head disk assembly
AFM head

Fig. 3-3 How to refit rotary head disk (2)

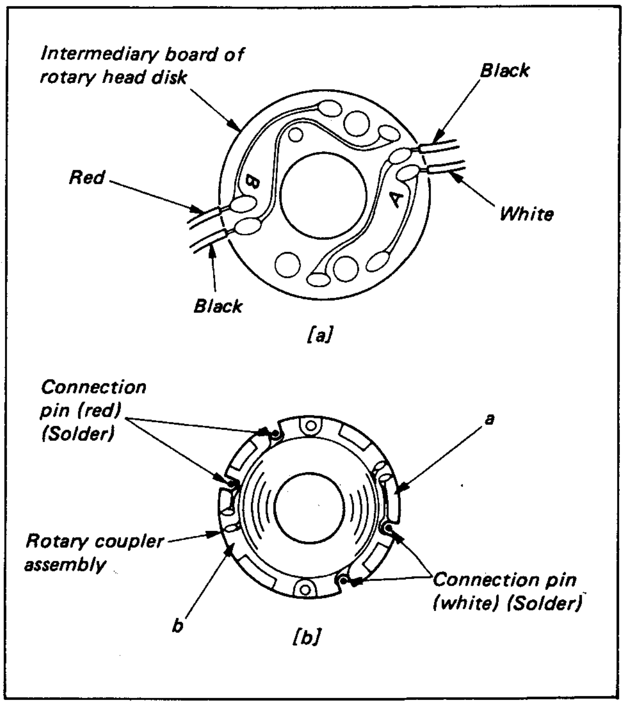

Intermediary board of rotary head disk
Black
Red
B
A
White
Black
[a]
Connection pin (red) (Solder)
a
Rotary coupler assembly
Connection pin (white) (Solder)
b
[b]

Fig. 3-4 How to refit rotary head disk (3)

3-1-3. Adjusting AFM rotary transformer gap

1) Loosen hex. socket head bolt ① for the guide arm assembly without unscrewing, and lift the upper ring assembly slightly.
2) Insert feeler gauge 1 into the gap in the rotary transformer, and push the upper ring assembly downward.
   Note: Take care not to tilt the upper ring assembly.
3) Tighten the hex. socket head bolt ① while holding the upper ring assembly down.
   Note: Take care not to move the upper ring assembly while tightening the bolt.
4) Remove feeler gauge 1, and ascertain that feeler gauge 2 does not enter the gap. If it enters, start readjusting from process 1) on.

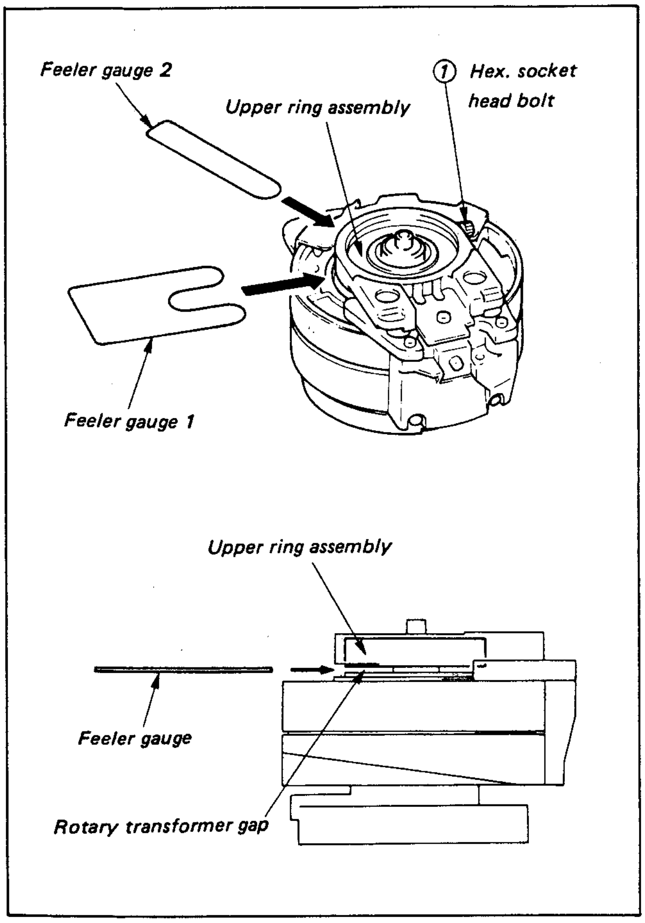

Feeler gauge 2
Upper ring assembly
① Hex. socket head bolt
Feeler gauge 1
Upper ring assembly
Feeler gauge
Rotary transformer gap

Fig. 3-5 Adjusting AFM rotary transformer gap

3-2. REPLACING UPPER DRUM

Accessory adjusting jig: Centering jig

Note: Keep it carefully after replacing the upper drum, as it will be used again when replacing the guide arm assembly. (It does not accompany the guide arm assembly.)

3-2-1. How to remove upper drum

Note: While removing the upper drum, never move hex. socket head bolt ⑦ . If it is moved, the gap in the rotary transformer must be adjusted later. (Refer to Paragraph 3-1-3.)

1) Unscrew two screws ① and remove the damper assembly.
2) Unscrew two screws ② , and remove the guide arm assembly.
3) Unscrew hex. socket head bolt ③ with an Allen key.
4) Unscrew two screws ④ , and remove the upper drum together with the upper drum mounting plate.
   Note: Be extremely careful not to touch parts around the drum.
5) Unscrew two screws ⑤ , and remove the upper drum mounting plate from the upper drum.
6) Unscrew two screws ⑥, and remove the tape retainer spring assembly.

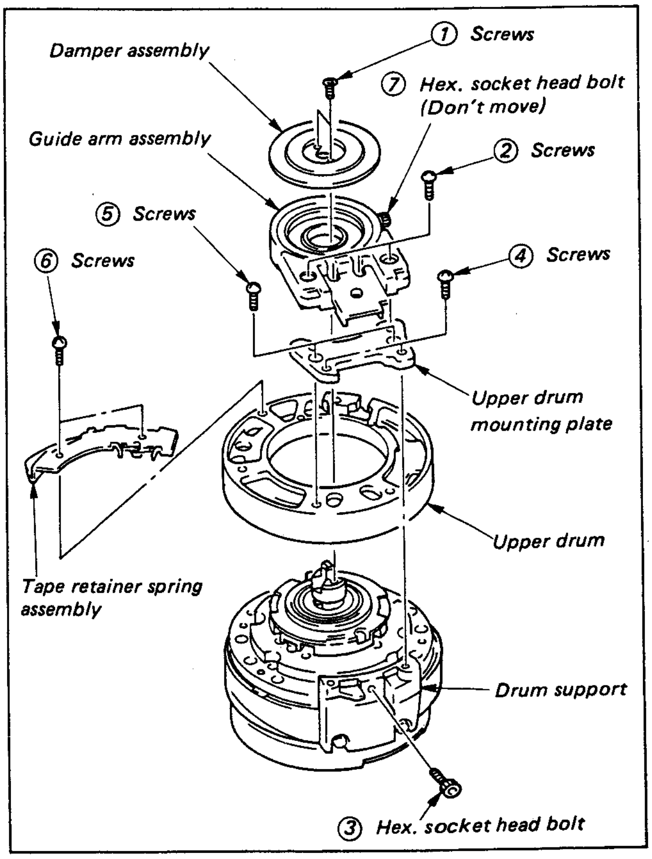

① Screws
Damper assembly
⑦ Hex. socket head bolt (Don't move)
Guide arm assembly
② Screws
⑤ Screws
⑥ Screws
④ Screws
Upper drum mounting plate
Upper drum
Tape retainer spring assembly
Drum support
③ Hex. socket head bolt

Fig. 3-6 How to remove upper drum

3-2-2. How to refit upper drum (See Fig. 3-6)

1) Fit the tape retainer spring assembly to the replacement upper drum with two screws ⑥ .
2) Refit the upper drum mounting plate with two screws ⑤.
3) Lightly clamp the upper drum mounting plate installed to the upper drum to the drum support with two screws ④ .
4) Tighten hex. socket head bolt ③ while holding the upper drum and the upper drum mounting plate tightly onto the drum support by hand.
5) Firmly tighten two screws ④ .
6) Refit the guide arm assembly with two screws ② .

   Note: Don't firmly tighten screws ② , but allow the guide arm assembly to move horizontally.
7) Insert the centering jig found in the box of the replacement upper drum between the guide arm assembly and the damper holder, and tighten screws ② firmly. Remove the centering jig, and check the clearance between the guide arm assembly and the damper holder for uniform distribution (See Fig. 3-6, 3-7).
8) Refit the damper assembly with two screws ① .

3-2-3. Centering Adjustment

1) Loosen the screw ② fastening the guide arm assy without removing the screw, enabling the guide arm assy to move horizontally.
2) Insert the centering jig supplied as an accessory in the gap between the guide arm assy and damper holder on the change upper drum.
3) Tighten the screw ② holding the centering jig.
4) Remove the centering jig and check that the gap between the guide arm assy and damper holder is uniform. Readjust starting 1) if the gap is not even.

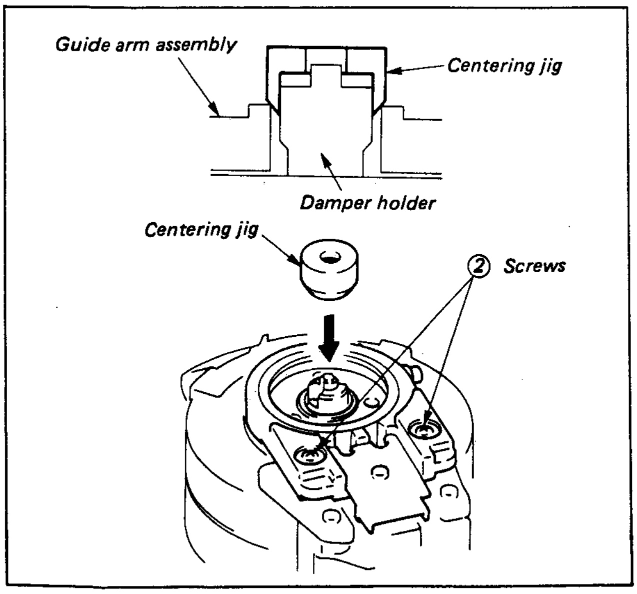


Fig. 3-7 Centering Adjustment

3-3. CAUTION WHEN CHANGING ROTARY COUPLER ASSEMBLY AND GUIDE ARM ASSEMBLY

1) Make sure to adjust the gap (refer to Paragraph 3-1-3) after changing the rotary coupler assy.

   The adjust jigs (feeler gauges 1 and 2) can be found with the rotary head disk assy for repair (A-6762-186-A).
2) Make sure to adjust centering (refer to Paragraph 3-2-3) and gap (refer to Paragraph 3-1-3) after changing the guide arm assy.

   The adjust jigs (centering jig, feeler gauges 1 and 2) can be found with the upper drum for repair (A-6760-178-A) and rotary head disk assy for repair (A-6762-186-A).

3-4. VIDEO HEAD DIHEDRAL CHECK AND ADJUSTMENT

This adjustment is generally unnecessary, but it is sometimes necessary when the video head disk is replaced. (The video head disk used for maintenance has been precision adjusted at the factory using a microscope and almost never needs to be readjusted.)

When judging whether the video head dihedral angle is correct, the alignment tape is played back. When this is done the tracking control knob must be in the centering position. If the check is done with this knob in other than the center click position (if the tracking is off-center), even if the dihedral angle is correct the picture will be reproduced as if it were off.

Before this adjustment is performed, the ACE assembly position adjustment (refer to the section where the tape path adjustment is described) must be completed.

[Method of checking]

With the tracking control knob set to the center click position, play back the monoscope section of the alignment tape (KR5-2C). Check to see if any of the vertical monoscope lines immediately below the switching pulse are reproduced double. If not, the dihedral angle is correct and does not have to be adjustment. If so, perform the adjustment as explained below.

[Adjusting method]

1) Insert the two dihedral adjusting screws (Jig Ref. No. J-10) into the adjusting screw holes on both sides of the video head –Ach (see Fig. 3-9) so that the tops of the adjusting screws flush with the upper face of the video head disk as shown in Fig. 3-8. (If screwing in is not sufficient, the video head disk does not rotate as the heads of the adjusting screws ram the upper drum. Conversely, if screwed in more than necessary, the head base is moved, and video head dihedral adjustment becomes very inaccurate.)

   Note: Be most careful the head under the part on the coupler board that is marked with white silk is the video head –Ach. The side marked b with white silk is the reference side. Never move it. (See Fig. 3-9)

2) Of the two adjusting screws, screw in farther either one of them until resistance is felt. Screwing in the screw farther, the video head moves, and dihedral adjustment can be made. (See Fig. 3-10)
3) Play back the monoscope signal part of the alignment tape (KR5-2C) with the adjusting screw on and check the signal. Rotate the screwed in adjusting screw counterclockwise to loosen it, then screw in the adjusting screw on the other side if the dihedral quantity of the vertical line has become larger than before making the adjustment.
4) Remove the adjusting screws and recheck after completing the adjustment.

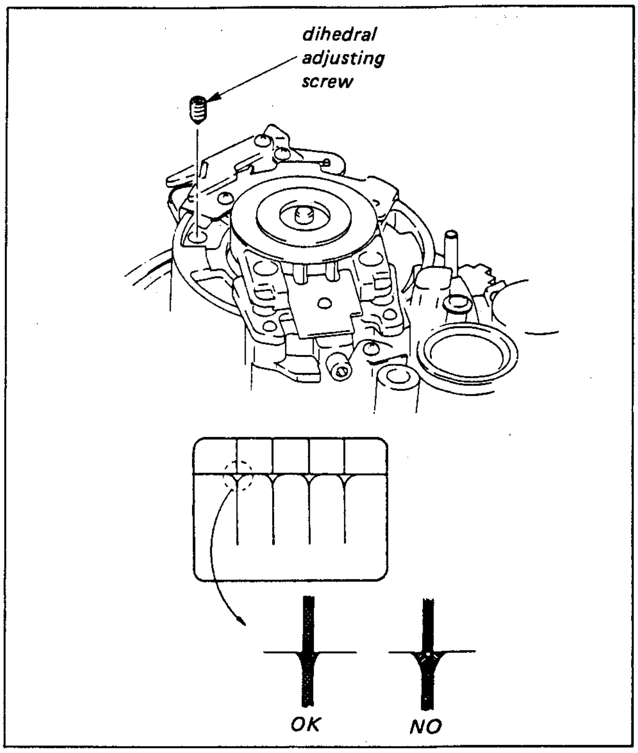

dihedral adjusting screw
OK
NO

Fig. 3-8 Video Head Dihedral Adjustment (1)

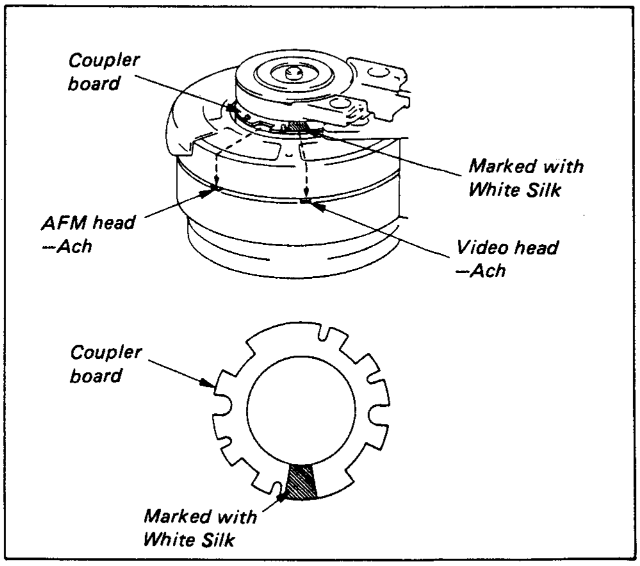

Coupler board
Marked with White Silk
AFM head –Ach
Video head –Ach
Coupler board
Marked with White Silk

Fig. 3-9 Video Head Dihedral Adjustment (2)

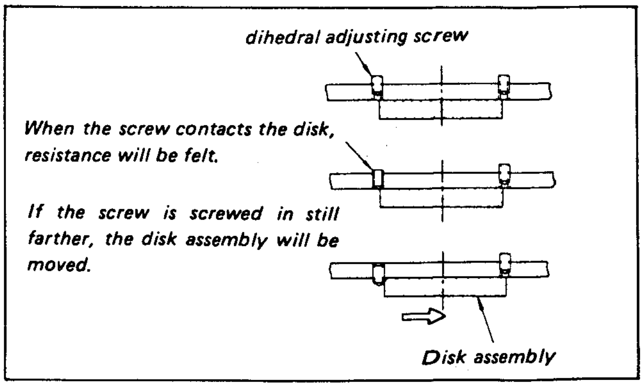

dihedral adjusting screw
When the screw contacts the disk, resistance will be felt.
If the screw is screwed in still farther, the disk assembly will be moved.
Disk assembly

Fig. 3-10 Video Head Dihedral Adjustment (3)

3-5. REPLACEMENT AND ADJUSTMENT OF DRUM ASSEMBLY

3-5-1. Replacement

1) Measure and record the two gaps (Ⓐ) between the upper drum tape holding section and the adjust plates (in Fig. 3-11). (Do not forget to do this, as the adjust plate mounting position affects the tape path.)
2) Unscrew the screws ① shown in Fig. 3-11 and remove the tape guide ground plate and adjust plates (2) and (3-1).
3) Remove the four connectors and three drum mounting screws from the bottom of the chassis and remove the drum assembly body.
4) Re-assemble the parts in reverse order.
5) Adjust according to "Tape Path Adjustment" after replacing the drum.

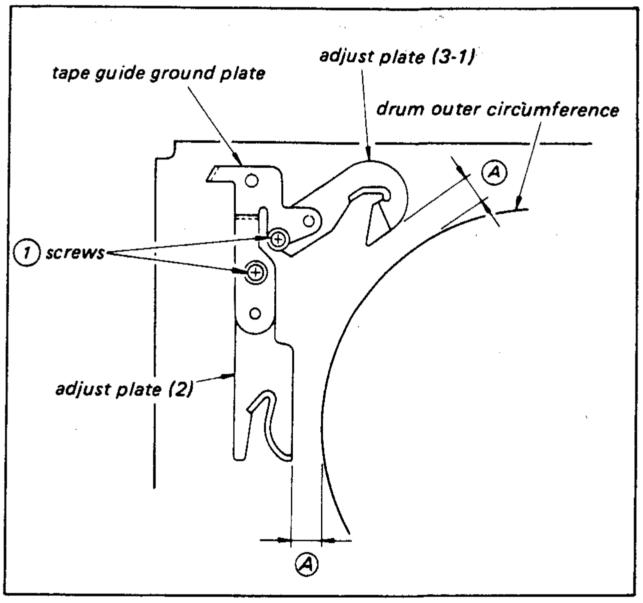

tape guide ground plate
adjust plate (3-1)
drum outer circumference
Ⓐ
① screws
adjust plate (2)
Ⓐ

Fig. 3-11. Replacing Drum

Note: Make sure that Ⓑ section of drum shield plate will not run over the capstan motor attachment screw.

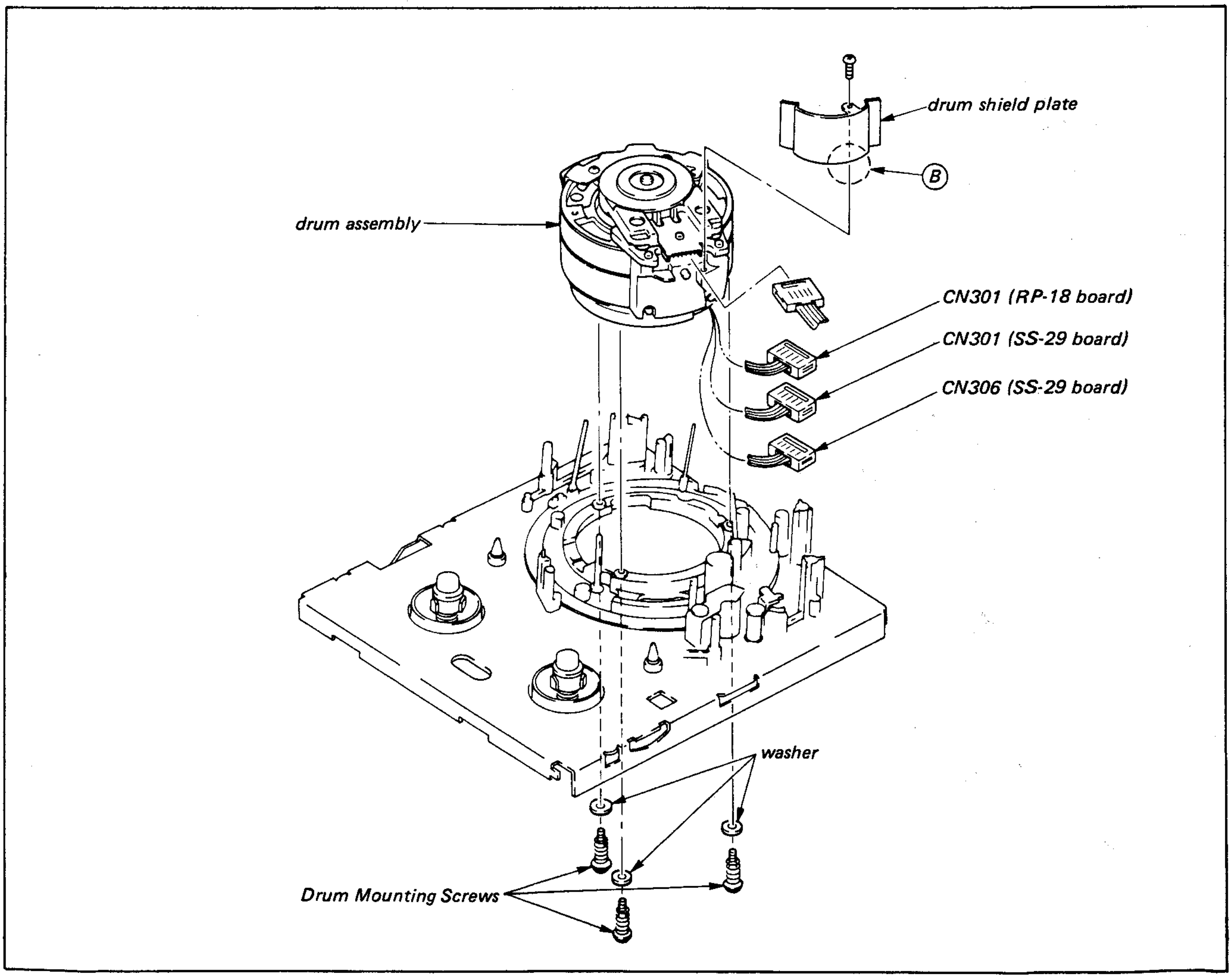

drum shield plate
Ⓑ
drum assembly
CN301 (RP-18 board)
CN301 (SS-29 board)
CN306 (SS-29 board)
washer
Drum Mounting Screws

Fig. 3-12. Dismounting Drum Assembly

3-5-2. Motor Clearance Adjustment when Replacing Drum Assembly

When replacing the drum assembly, adjust so that clearance between the rotor and coil is 0.3 — 0.6 mm. (See Fig. 3-13)

[Procedure]

1) When re-assembling the drum, use the spacer which was removed and confirm that the 0.3 mm side of the clearance gauge included with the repair drum can be inserted, and that the 0.6 mm side cannot be inserted.
2) If this specification is not satisfied, dispose of the old spacer and use the spacers (0.3 mm x 4) included with the new repair drum as needed.

- **Clearance Confirmation**

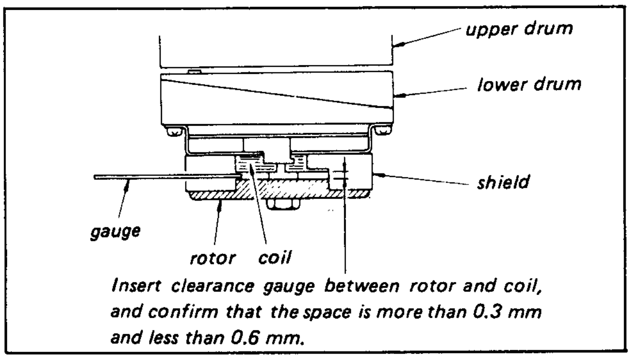

upper drum
lower drum
shield
gauge
rotor
coil
Insert clearance gauge between rotor and coil, and confirm that the space is more than 0.3 mm and less than 0.6 mm.

Fig. 3-13. Adjusting Motor Clearance When Replacing Drum Assembly

[Removal of Stator, Rotor]

1) Remove nut ① and washer ②.
2) Remove rotor ③ from stator ④.
3) Unscrew the two screws ⑤ and remove stator from drum body.

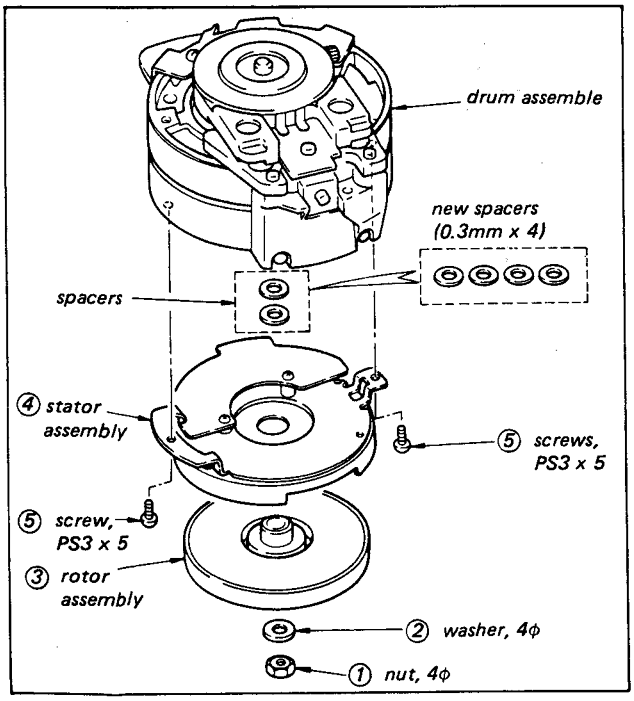

drum assemble
new spacers (0.3mm x 4)
spacers
④ stator assembly
⑤ screws, PS3 x 5
⑤ screw, PS3 x 5
③ rotor assembly
② washer, 4φ
① nut, 4φ

Fig. 3-14. Dismounting Stator and Rotor When Replacing Drum Assembly

3-6. REPLACEMENT AND ADJUSTMENT OF CAPSTAN MOTOR

3-6-1. Removal of the Capstan Motor

Unscrew screws ①, ②, ③ and remove the capstan motor from the mechanism chassis.

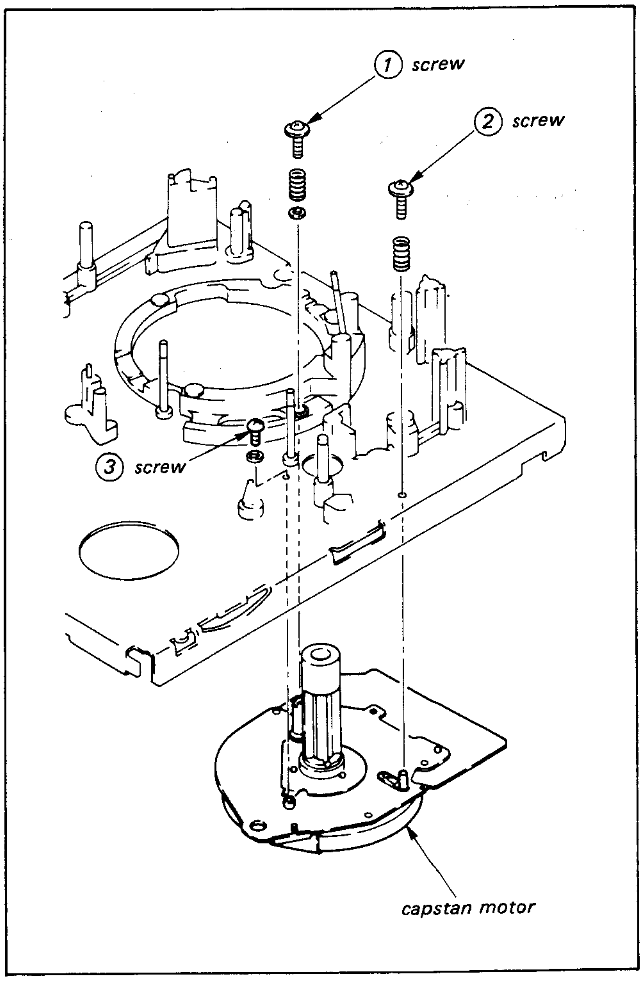

① screw
② screw
③ screw
capstan motor

Fig. 3-15. Dismounting Capstan Motor

3-6-2. Perpendicular Adjustment of Capstan Spindle

Be sure to adjust as follows after the capstan motor has been replaced or removed:

1) Place parallel plate (Tool Ref. No. J-2) on No. 10 guide sleeve of the pinch press arm assembly perpendicularly, as shown in Fig. 3-16.
2) Loosen screw ①.
3) Rotate adjusting screw ② and align the capstan spindle perpendicularly.
4) Tighten screw ① and fix the capstan motor.
5) Adjust according to "Tape Path Adjustment".

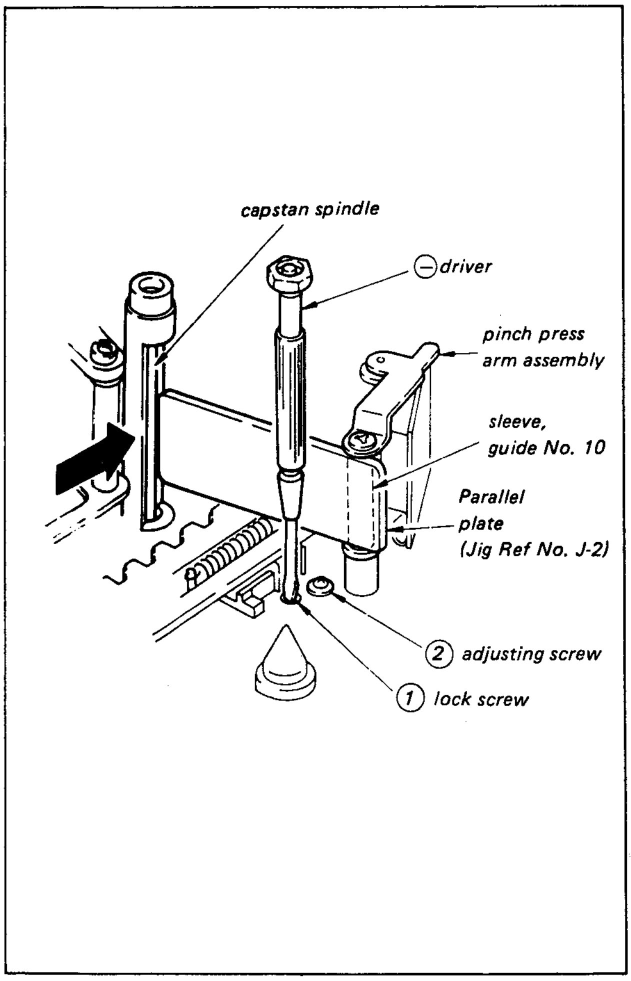

capstan spindle
⊖driver
pinch press arm assembly
sleeve, guide No. 10
Parallel plate (Jig Ref No. J-2)
② adjusting screw
① lock screw

Fig. 3-16. Perpendicular Adjustment of Capstan Motor Spindle

3-7. REMOVAL OF TENSION PICK-UP ASSEMBLY

1) Remove spring ① and disengage hook ② to pull out the tension pick-up assembly.

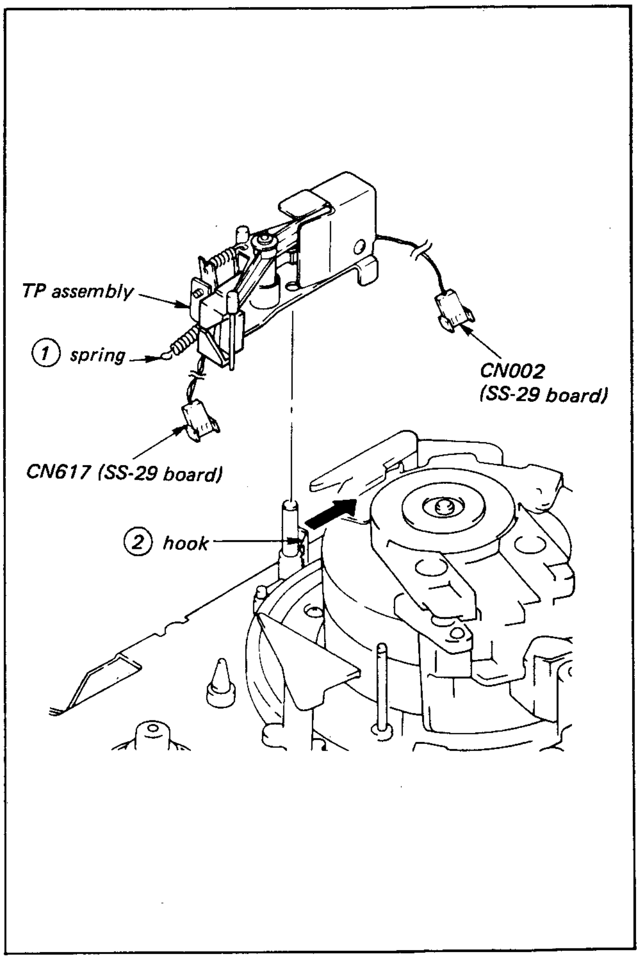

TP assembly
① spring
CN002 (SS-29 board)
CN617 (SS-29 board)
② hook

Fig. 3-17. Dismounting Tension Pickup Assembly

Note: When replacing or removing the tension pick-up assembly, be sure to also adjust the back tension.
See "Back Tension Check and Adjustment".

3-8. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

1) The stopper slips out and the cassette compartment assembly moves up when the IL sliding plate is slided in the arrow direction.

   Note: The cassette compartment assembly is lifted up by a spring this time. Hold the cassette compartment assembly lightly by a hand and carefully watch so that it is not lifted upward suddenly.

2) Unscre four screws ① and remove the cassette compartment by lifting it up.

   Note: When removing the cassette compartment be careful not to hook it on the tension pick-up.

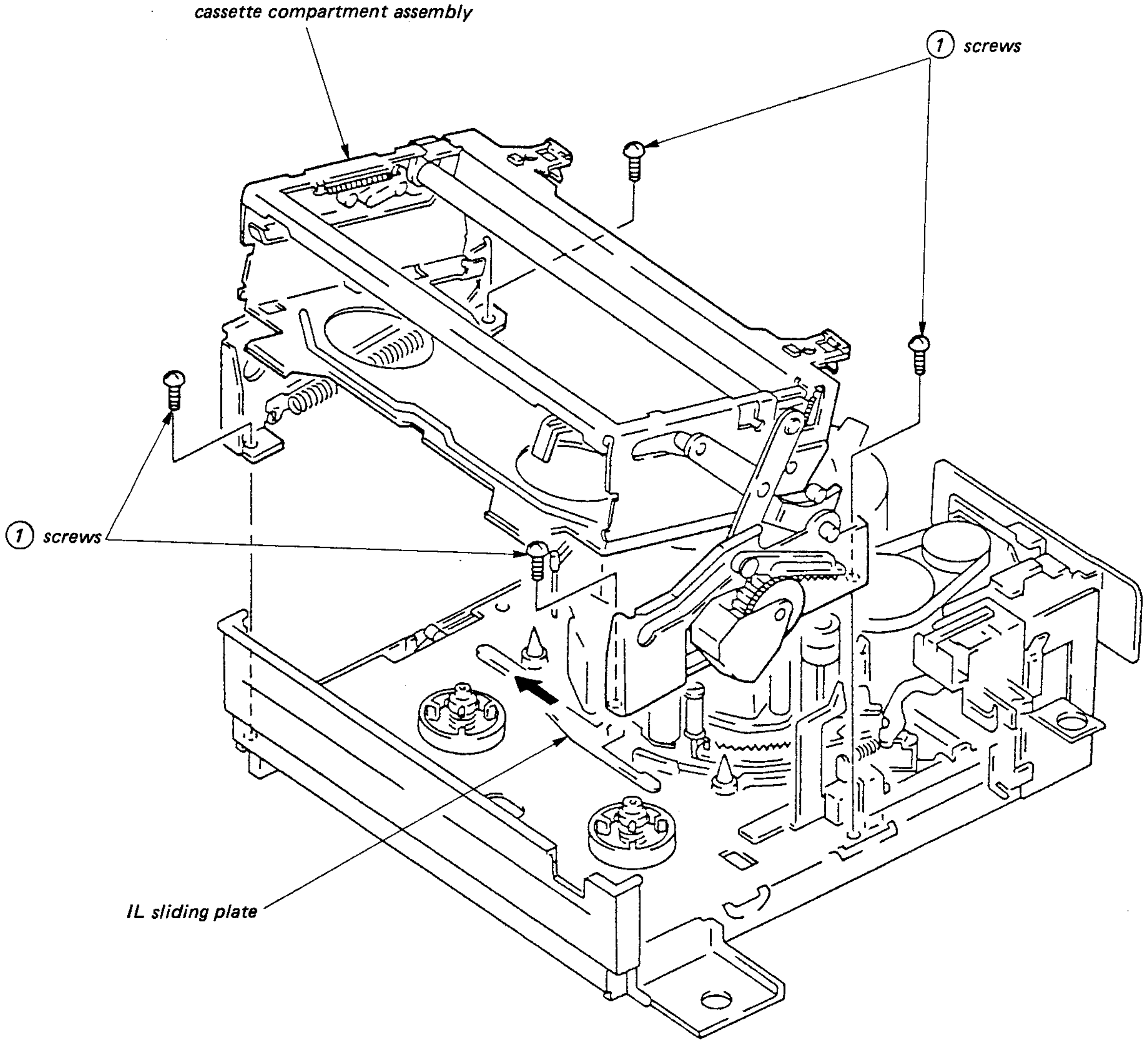

cassette compartment assembly
① screws
① screws
IL sliding plate

Fig. 3-18. Removal of Cassette Compartment Assembly

3-9. REMOVAL OF REEL MOTOR

1) Unscrew the five mounting screws ① on the front of the chassis and remove the reel motor body.

Note: The rotor section can be removed by pulling it straight up.

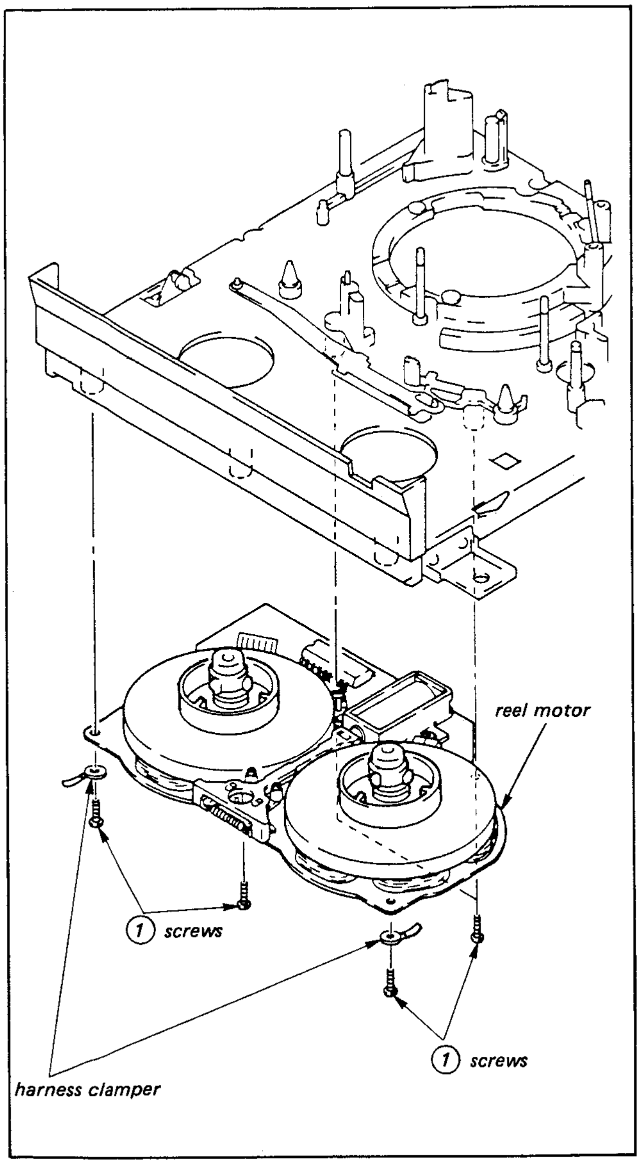

reel motor
① screws
① screws
harness clamper

Fig. 3-19. Removal of Reel Motor

3-10. THREADING/UNTHREADING ADJUSTMENT

3-10-1. Checking Cassette Detection Switch Operation

1) Unthread manually without loading a cassette.

2) Check that the cassette detection switch in Fig. 3-20 does not trip (no click is generated) when pushed.

3) Press the cassette compartment lock in the diagram with blade-tip screwdriver to lock it.

4) Check that the cassette detection switch trips when pushed (click sound).

5) Push the release slide plate of the cassette compartment lock in the direction of arrow Ⓐ and push the lock lever assembly in the same direction to return it to the previous state.

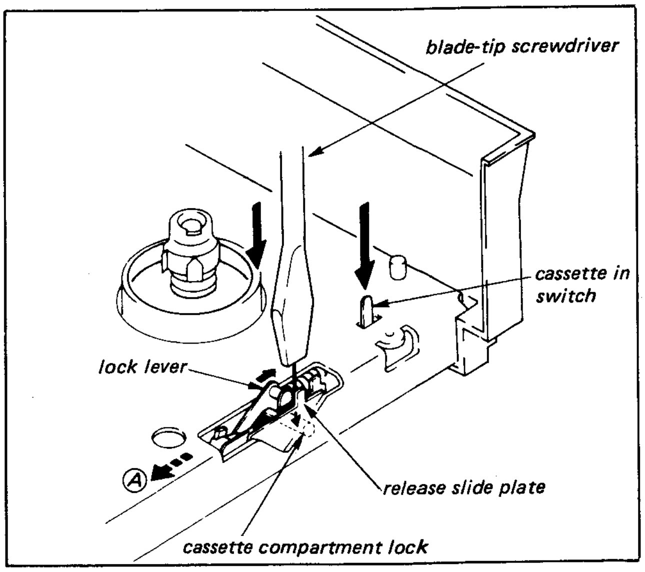

blade-tip screwdriver
cassette in switch
lock lever
Ⓐ
release slide plate
cassette compartment lock

Fig. 3-20.

3-10-2. Unthreading Check

1) Set in STOP mode without loading a cassette.

2) Press the EJECT button and unthread. (Unthreading is complete when the T slider shaft returns slightly in the threading direction and stops after pushing the cassette-compartment lock release lever.)

3) Check that the actuator for the unthreading end switch is not tripped as shown in Fig. 3-21. (Slowly rotate the threading motor by hand and verify with a click sound.)
Adjust according to Paragraph 3-15-2 if needed.

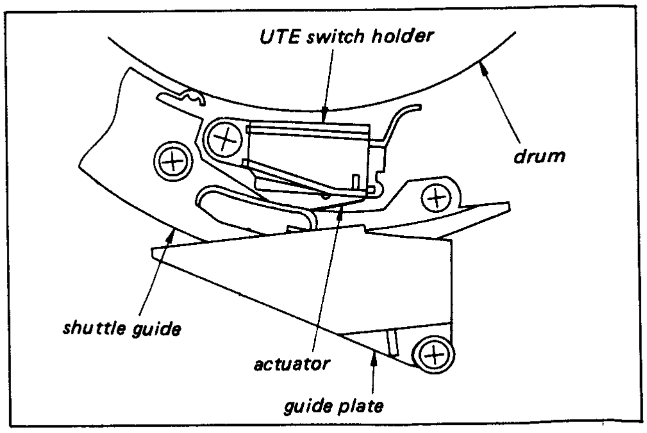

UTE switch holder
drum
shuttle guide
actuator
guide plate

Fig. 3-21. Unthreading end switch

3-11. S THREADING RING REPLACEMENT AND ADJUSTMENT

3-11-1. Preparation for Removal of S Threading Ring

Remove ACE assembly, FE Head and Threading Motor.

1) Remove the two screws ① and harness clamp ② .
2) Unscrew the Phillips head continuous-thread stepped screw ③.
3) Remove the No. 6 guide nut ④ , flange ⑤ , spacer ⑥ and compression coil spring ⑦ .
4) Remove the two guide adjusting nuts ⑧ and the ACE assembly and FE head.

Note: ACE assembly and FE head are connected by a lead.
Be careful when removing them.
The compression coil spring under-neath the ACE assembly does not have to be removed. However, be careful not to lose it.

5) Unscrew the one screw ⑨ and pull the threading motor assembly up to remove.

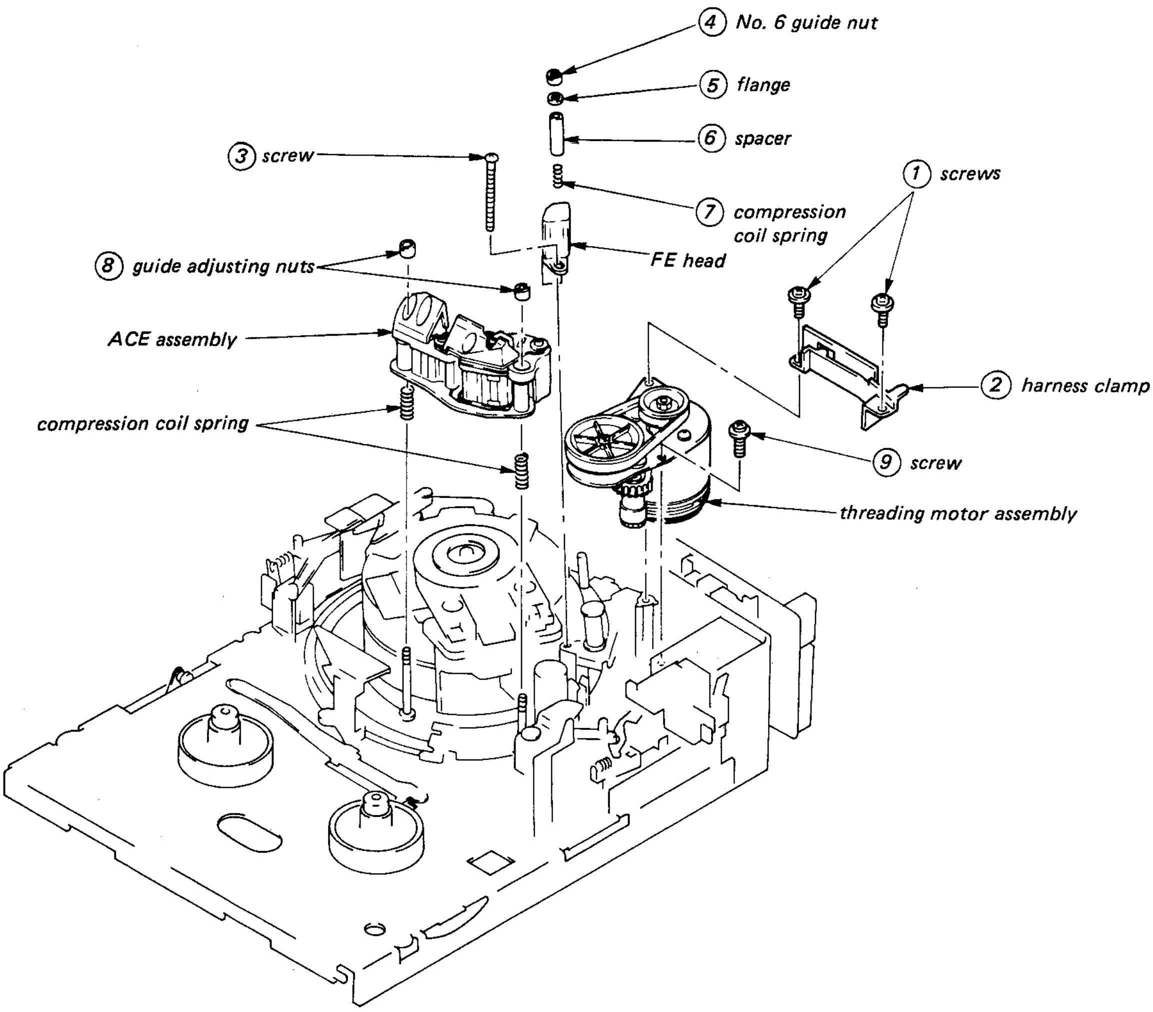

④ No. 6 guide nut
⑤ flange
⑥ spacer
③ screw
① screws
⑦ compression coil spring
FE head
⑧ guide adjusting nuts
ACE assembly
② harness clamp
compression coil spring
⑨ screw
threading motor assembly

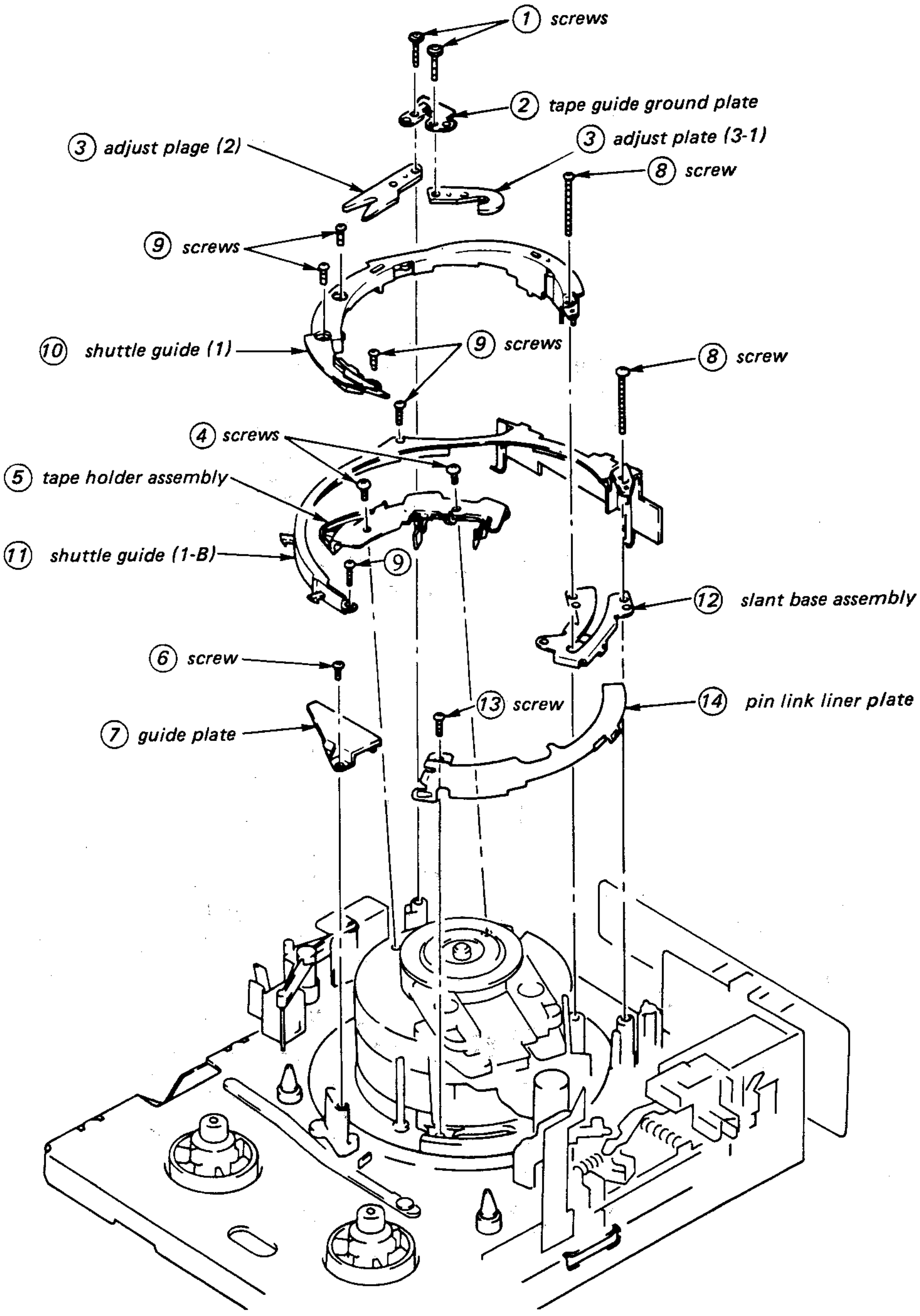
Fig. 3-22. Removal of ACE Assembly, FE Head and Threading Motor

[Removal of Other Parts]

1) Measure the gap between the upper drum and the adjust plate as for replacement of the drum assembly. (Fig. 3-11)
2) Unscrew the two screws ① and remove the tape guide ground plate ② and adjust plate ③.
3) Unscrew the two screws ④ and remove the tape holder assembly ⑤
4) Unscrew screw ⑥ and remove the guide plate ⑦
5) Unscrew the two screws ⑧ and five screws ⑨ to remove the shuttle guide (1) ⑩ and (1-B) ⑪ as well as the slant base assembly ⑫ .
6) Unscrew screw ⑬ and remove the pin link liner plate ⑭

Note:

When the guide plate is removed, do not thread or unthread with the shuttle guide mounted.



① screws
② tape guide ground plate
③ adjust plage (2)
③ adjust plate (3-1)
⑧ screw
⑨ screws
⑩ shuttle guide (1)
⑨ screws
⑧ screw
④ screws
⑤ tape holder assembly
⑪ shuttle guide (1-B)
⑨
⑫ slant base assembly
⑥ screw
⑬ screw
⑭ pin link liner plate
⑦ guide plate

Fig. 3-23. Removal of Other Parts

3-11-2. Removal of S Threading Ring

1) Remove the spring of the lock arm assembly. (Refer to Paragraph 3-15-1, Fig. 3-32)
2) Remove stop washers ① and ring rollers ②, ③.
3) Remove the UTE switch subassembly. (Refer to Paragraph 3-15-2, Fig. 3-36)
4) Unscrew screw ④ and remove the ring roller adjustment plate ⑤ and ring roller ⑥.
5) Remove the S threading ring ⑦.

Note:
Do not use the same washer twice.

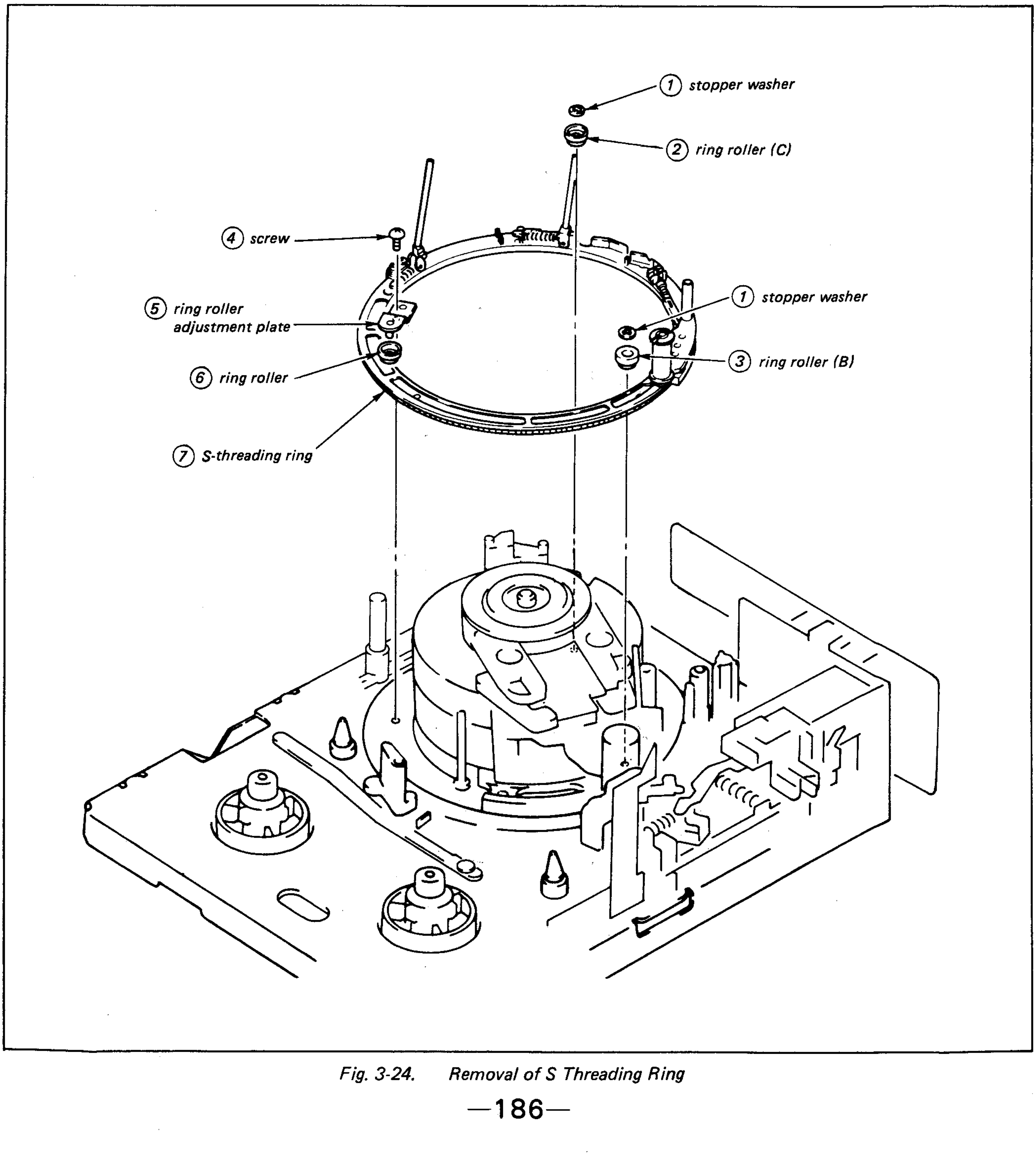

① stopper washer
② ring roller (C)
④ screw
① stopper washer
⑤ ring roller adjustment plate
③ ring roller (B)
⑥ ring roller
⑦ S-threading ring

Fig. 3-24. Removal of S Threading Ring

3-11-3. Checking Slider Stopper Mounting

1) Check that the drive gear is engaged.

2) Loosen screw ①, insert a spacer (t = 0.2) between the slider gear and slider stopper, then tighten screw ① while pushing in the directions of arrows Ⓐ and Ⓑ.

Note: Make sure to push it in the direction Ⓐ to eliminate any play. The slider stopper rotates in the direction of arrow Ⓐ when screw ① is tightened. Therefore, tighten the screw while holding it with a blade-tip screwdriver.

3-11-4. Replacement of S Threading Ring

1) Mount the S threading ring.

2) Insert a spacer (t = 0.2) and set the slider gear to the position where unthreading is complete.
(In the diagram, the slider stopper and slider gear come into contact at Ⓐ through the spacer.)

3) Match up the notch on the S threading ring and the tab on the drive gear as shown at Ⓑ in the diagram.

4) Engage the drive gear, S threading ring, and slider gear, and position the chassis.

5) The gap between the tab on the slider gear and the slider stopper at section Ⓐ is about 0.5 mm when the S threading ring is rotated fully CCW toward of arrow ⓐ. At the same time, verify that the chassis hole (ϕ3) at Ⓒ and the hole (ϕ1.5) of the S threading ring match.

6) If the holes do not match exactly, adjust the engagement of the drive gear and S threading gear.

Note: After replacing and mounting, adjust the guide height according to Section 3-12. Also adjust the ACE assembly according to the section on "Tape Path Adjustment".

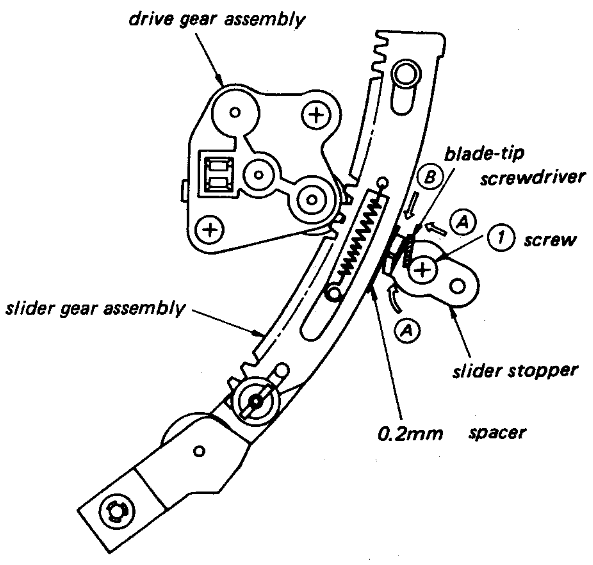

drive gear assembly
blade-tip
Ⓑ
screwdriver
Ⓐ
① screw
slider gear assembly
Ⓐ
slider stopper
0.2mm spacer

Fig. 3-25. Slider stopper mounting check

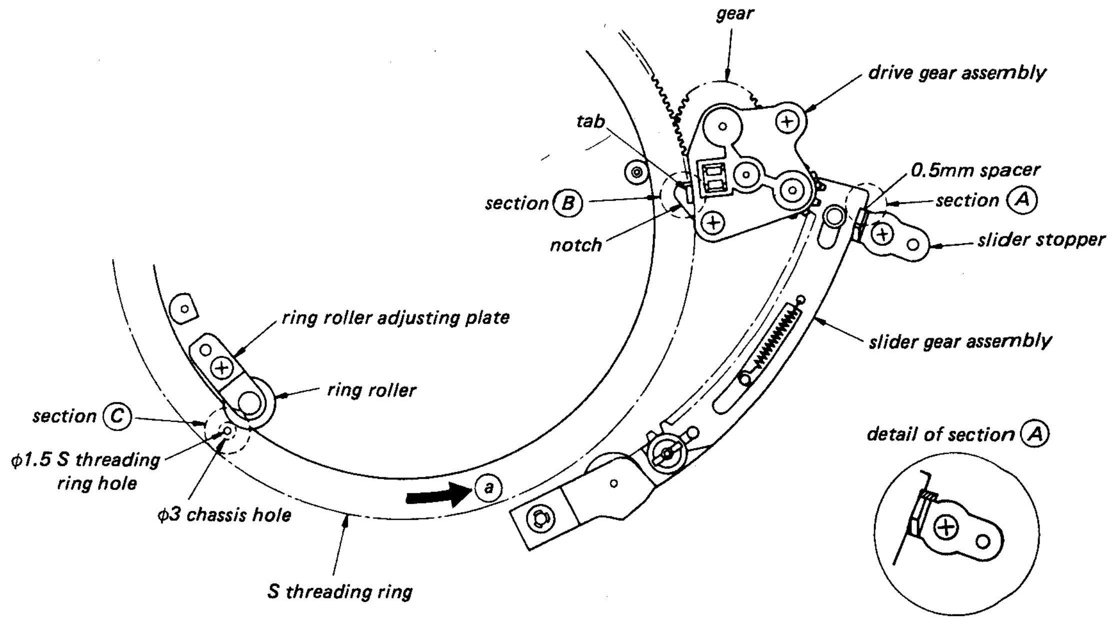
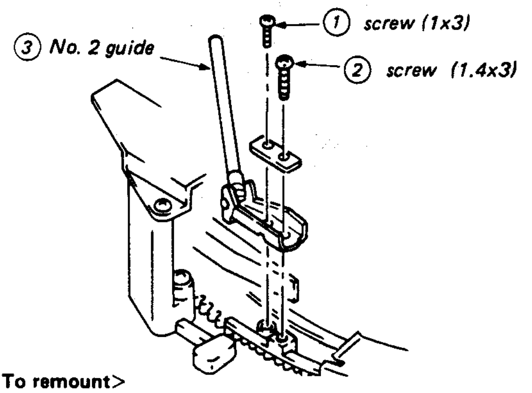

gear
drive gear assembly
tab
0.5mm spacer
section Ⓑ
section Ⓐ
notch
slider stopper
ring roller adjusting plate
slider gear assembly
ring roller
section Ⓒ
detail of section Ⓐ
ϕ1.5 S threading ring hole
ⓐ
ϕ3 chassis hole
S threading ring

Fig. 3-26. Replacement of S threading ring

3-12. ADJUSTMENT OF No. 2 AND No. 3 GUIDE HEIGHTS

3-12-1. Removal of No. 2 Guide

1) Unscrew the screw (1×3) ①.
2) Unscrew the screw (1.4×3) ②.
3) Remove the No. 2 guide ③.


③ No. 2 guide
① screw (1x3)
② screw (1.4x3)

<To remount>

1) Loosely tighten the 1 x 3 tap-in screw.
2) Tighten the 1.4 x 3 tap-in screw all the way.
3) Adjust the 1 x 3 tap-in screw until the height is 35 mm. After adjustment, lock the screw.
Note: The No. 2 guide is up all the way.

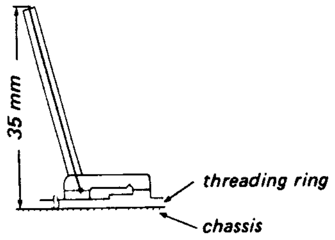
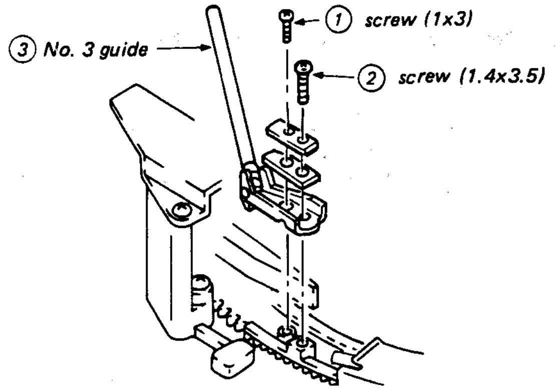

35 mm
threading ring
chassis

Fig. 3-27. Removal of No. 2 Guide

3-12-2. Removal of No. 3 Guide

1) Unscrew the screw (1×3) ①.
2) Unscrew the screw (1.4×3.5) ②.
3) Remove the No. 3 guide ③.


③ No. 3 guide
① screw (1x3)
② screw (1.4x3.5)

<To remount>

1) Loosely tighten the 1 x 3 tap-in screw.
2) Tighten the 1.4 x 3.5 tap-in screw all the way.
3) Adjust the 1 x 3 tap-in screw so that the height is 30 mm. After adjustment, lock the screw.
Note: The No. 3 guide is up all the way.

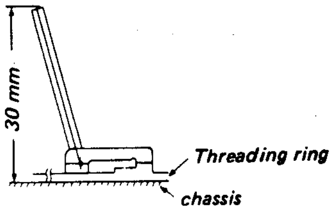

30 mm
Threading ring
chassis

Fig. 3-28. Removal of No. 3 Guide

3-13. CHECK AND ADJUSTMENT OF PINCH PRESS LIMITER CLEARANCE

[Check Procedure]

1) Set up a threading completed state.
2) Check that the clearance "t" of the pinch press limiter in Fig. 3-29 is 0.4 — 0.6 mm. If not, adjust as follows:

[Adjustment Procedure]

1) Loosen screw ① in Fig. 3-29 with the pinch solenoid held in.
2) Move the pinch limiter adjust plate (shaded in the diagram) fully in the direction of arrow ⓐ. The clearance "t" at this time is 0.
3) Push the pinch limiter adjust plate in the direction of arrow ⓑ as shown at section Ⓐ using a blade-tip screwdriver, until the clearance "t" is 0.4 — 0.6 mm.
   (Use ϕ0.4 and ϕ0.6 gauges for clearance adjustment)
4) Tighten screw ① and lock it.

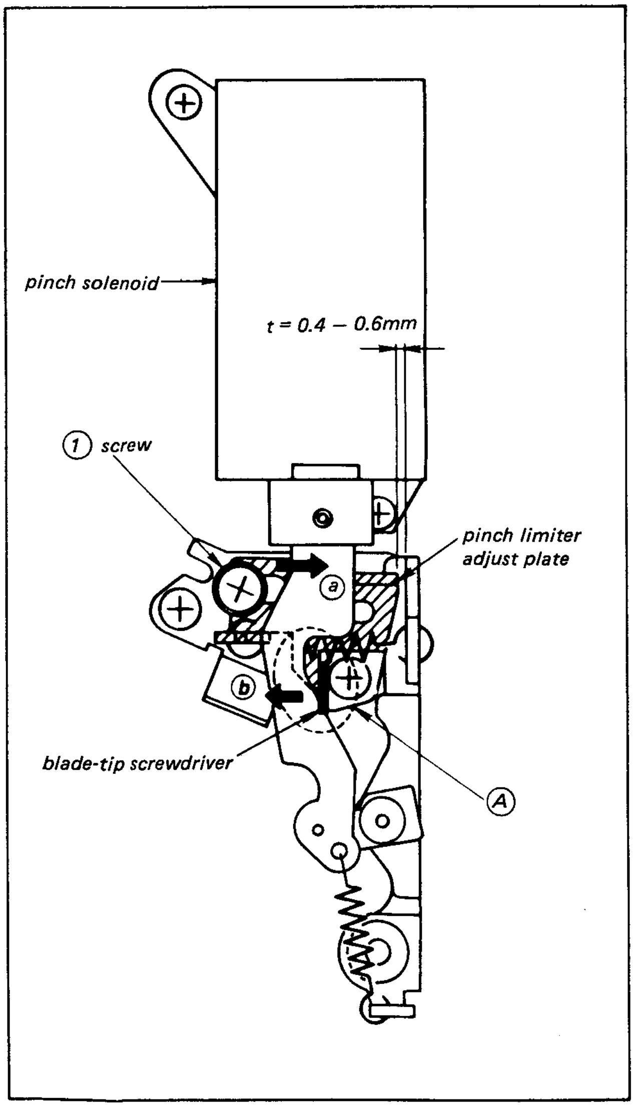

pinch solenoid
t = 0.4 – 0.6mm
① screw
pinch limiter adjust plate
ⓐ
ⓑ
blade-tip screwdriver
Ⓐ

Fig. 3-29. Pinch Press Limiter Clearance Adjustment

3-14. BRAKE OPERATION CHECK AND BRAKE PLUNGER ADJUSTMENT

The tape slackens particularly when the tape diameter on the take-up side in both FF and REW is small.

[Checking Procedure]

1) Start winding a cassette. (Rewind the tape and start forward feed)
2) Repeat FF→STOP several times and check that the tape does not slacken. If the tape slackens, adjust as follows.
3) Wind the tape to the end in forward feed.
4) Repeat REW→STOP several times and verify that the tape does not slacken. Adjust as follows if the tape slackens.

[Adjustment Procedure]

1) Remove the mechanism chassis from the circuit board.
2) Loosen screw Ⓐ on the plunger solenoid
3) Push the plunger in the direction of arrow Ⓑ by hand until fully retracted.
4) Adjust the plunger solenoid so as to obtain clearances of 0.2 to 0.7 mm between the two brakes and S and T reel rotors. Tighten screw Ⓐ.

Note: After tightening screw Ⓐ, check for proper clearance at Ⓒ and Ⓓ.

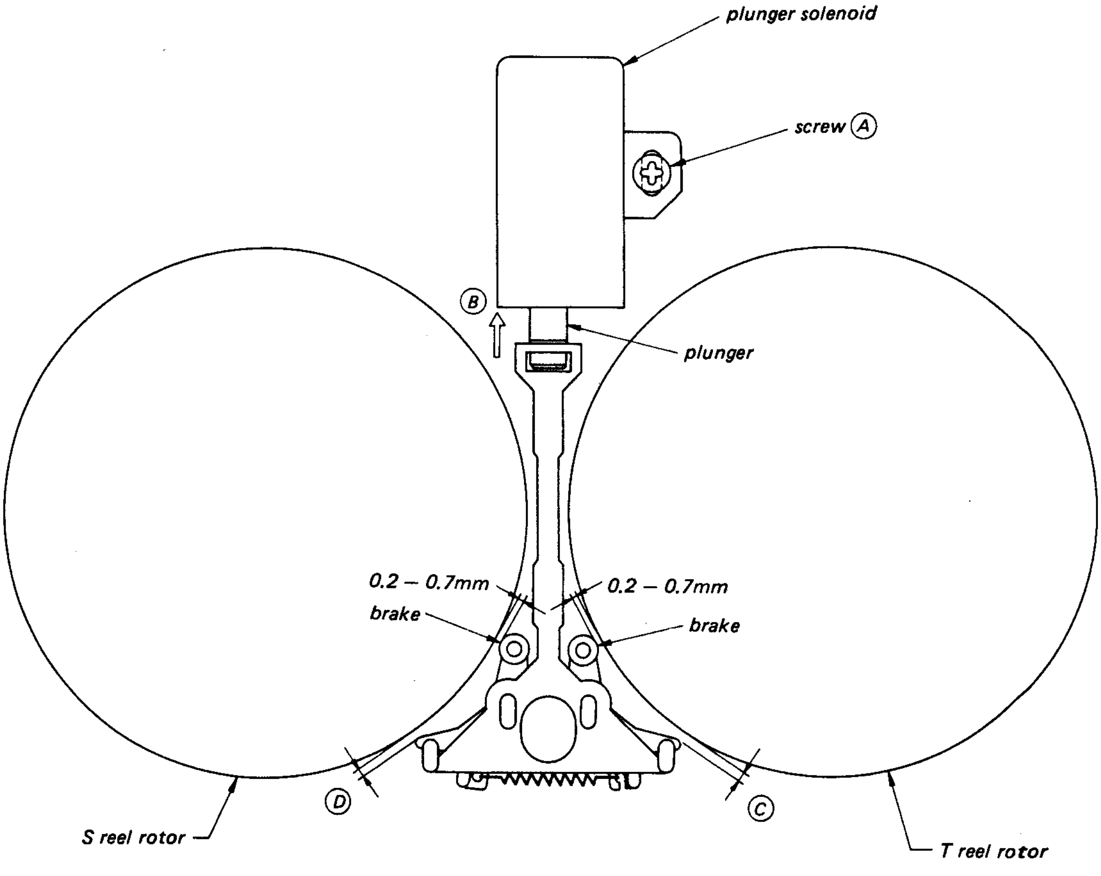


Fig. 3-30. Brake plunger adjustment

3-15. CHECK AND ADJUSTMENT OF MICROSWITCH POSITION

3-15-1. Check and Adjustment of Threading End Switch (TE Switch) Position

[Check Procedure]

Rotate the S threading ring by hand and check that the TE switch turns on and off with a clicking noise while the lock roller is moving within the upper 2/3 of the straight portion ℓ of the recess Ⓐ in Fig. 3-31on the ring. If not, adjust as follows.

[Adjustment Procedure]

1) Adjust the lock roller to the position caving from the notch rim tip on the S threading ring, rotate the cam shaft using a blade-tip screwdriver in the direction of the arrow, and secure the cam shaft when the TE switch is turned on (a click tone is audible).
2) Check the results of the adjustment following the check procedure above.

[Removal]

1) Unhook the tension coil spring from the lock arm assembly.
2) Unscrew screw ① and remove the TE switch subassembly.
3) Push the hook on the main chassis assembly in the direction of the arrow to unhook and remove the lock arm assembly.

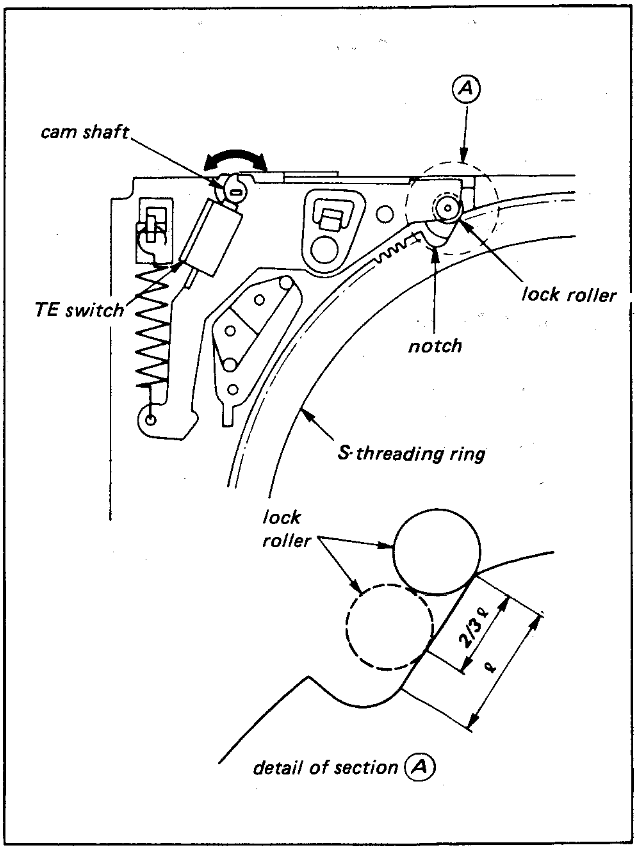

Ⓐ
cam shaft
TE switch
lock roller
notch
S·threading ring
lock roller
2/3ℓ
ℓ
detail of section Ⓐ

Fig. 3-31. TE Switch Position Adjustment

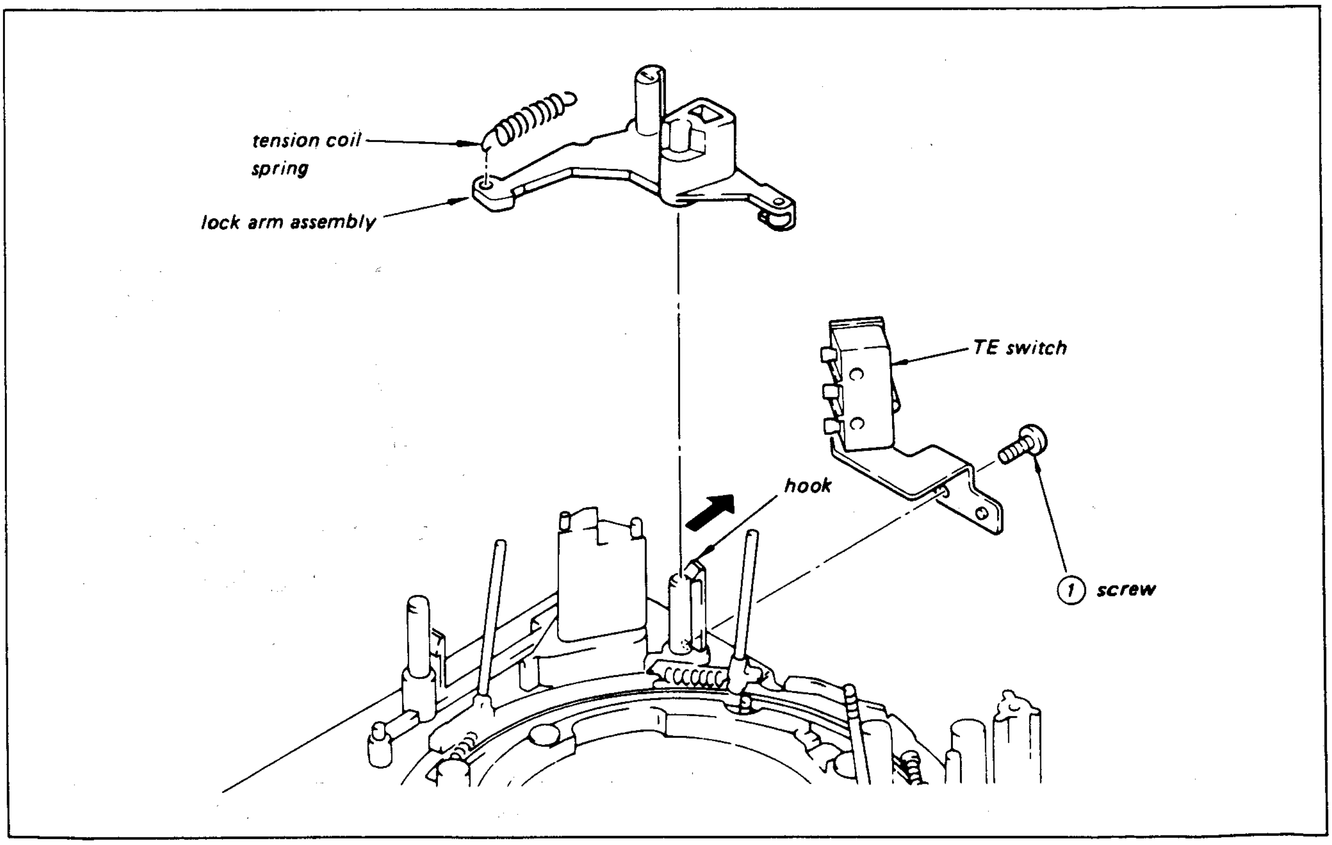

tension coil spring
lock arm assembly
TE switch
hook
① screw

Fig. 3-32. Removing TE Switch and Lock Arm Assembly

3-15-2. Check and Adjustment of Unthreading End Switch (UTE Switch) Position

[Check Procedure]

Rotate the S threading ring by hand. Verify that the switch trips when a pin of $\phi1.2$ is inserted at section Ⓐ in Fig.3-33 after the UTE switch arm roller assembly has dripped into the UTE switch cam groove. Verify that the switch does not trip when a pin of $\phi0.6$ is inserted.

[Adjustment Procedure]

1) If the switch does not trip when the $\phi1.2$ pin is inserted, loosen small screw ① and adjust by moving in the direction of the arrow little by little.
2) The switch actuator is bent as shown in Fig.3-34 when the switch turns on after inserting a $\phi0.6$ pin. Check the adjustment.

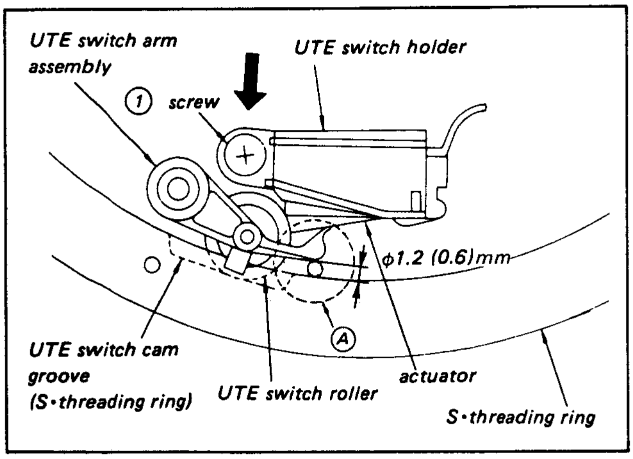

UTE switch arm assembly
① screw
UTE switch holder
ϕ1.2 (0.6)mm
Ⓐ
UTE switch cam groove (S•threading ring)
UTE switch roller
actuator
S•threading ring

Fig. 3-33. UTE Switch Position Adjustment

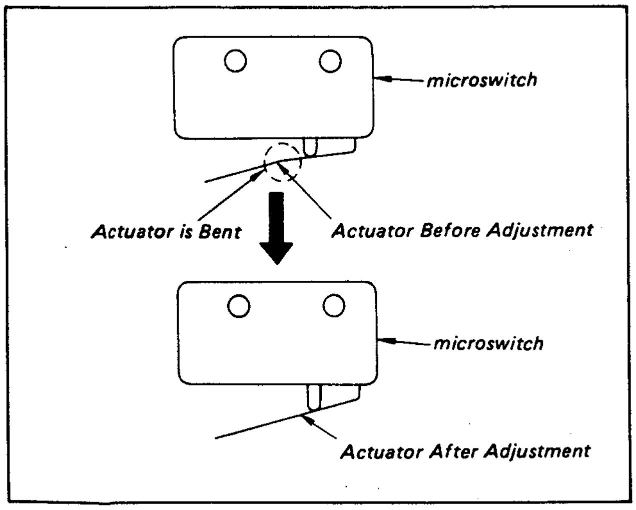

microswitch
Actuator is Bent
Actuator Before Adjustment
microswitch
Actuator After Adjustment

Fig. 3-34. Actuator Adjustment

Note:

Insert the $\phi1.2$ and 0.6 pins into their correct positins as shown in Fig.3-35. (Even when the clearance at the entrance is 1.2 mm on construction, depending on the pin insertion positions as shown in Fig.3-35, the clearance inside is less than 1.2 mm).

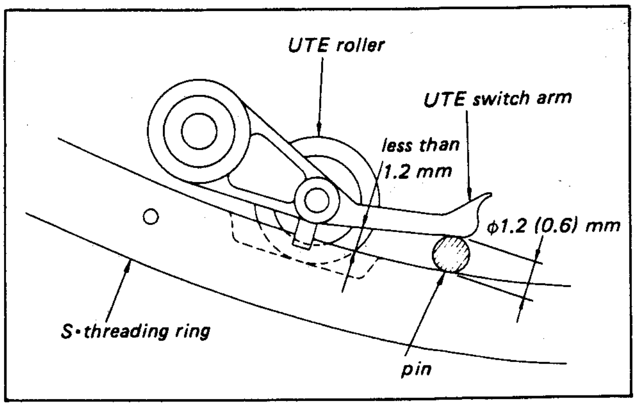

UTE roller
UTE switch arm
less than 1.2 mm
ϕ1.2 (0.6) mm
S•threading ring
pin

Fig. 3-35. Pin Position During Chec

[Removal]

1) Unscrew screw ① as shown in Fig. 3-36.
2) Release the switch hook ② from the chassis and remove the switch body while pushing the actuator to the "ON" position.

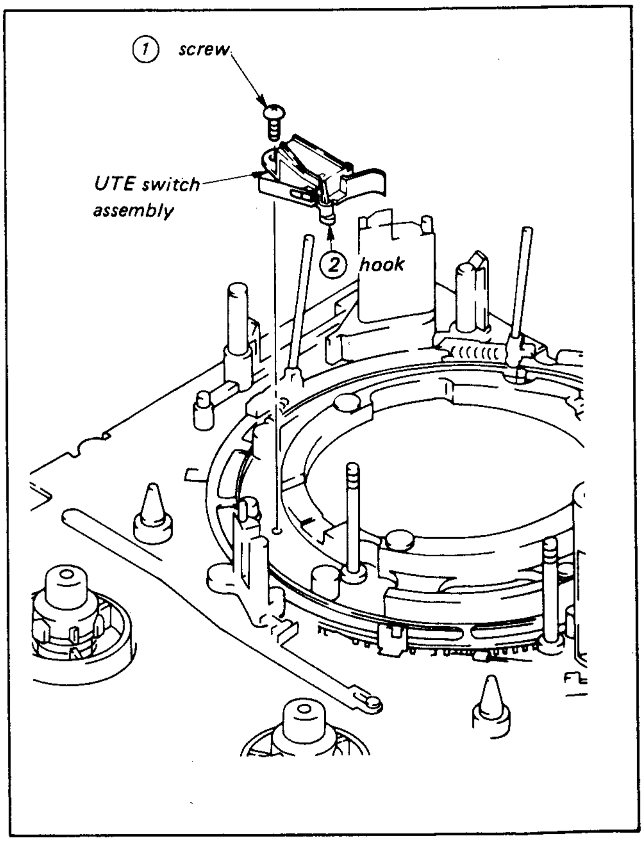

① screw
UTE switch assembly
② hook

Fig. 3-36. Removing UTE Switch

3-16. FORWARD/BACK TENSION MEASUREMENT

Perform this measurement using torque cassette SL-0003C according to the procedure below.

[Procedure]

1) Remove the upper panel so that the tape path is visible.
2) Insert the torque cassette and press PLAY.
3) Read the S reel side meter after the indicator has made about one revolution.
   Specified Value 45 – 48 g·cm

Note: 1) Be sure the set is level when measuring.
2) After measuring, the tape may go slack if the STOP button is pressed, so put the set into forward mode first, to remove the slack, then the tape can be ejected.

[Adjustment]

If the specified value is not obtained, adjust with RV002 on the SS-29 board.

3-17. REPLACING T SENSOR BLOCK

3-17-1. Removal of the T sensor block

1) Remove the one screw ①.
2) Remove the guide plate ②.
3) Remove the T sensor block ③.

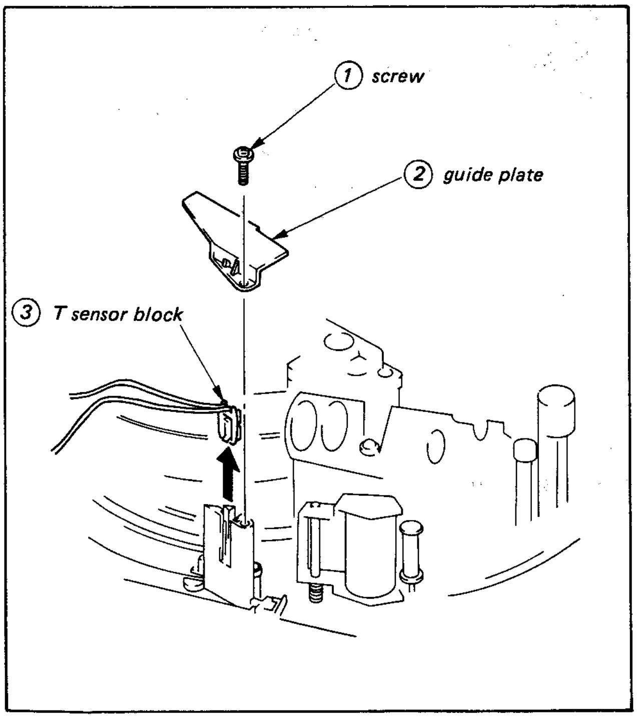


Fig. 3-37. Removal of the T Sensor Block

3-17-2. Removal of the T sensor

1) Remove the two claws ①.
2) Remove the T sensor ②.

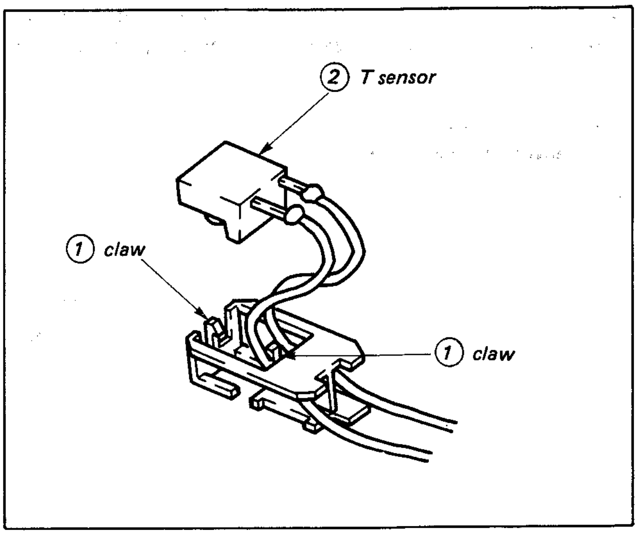


Fig. 3-38. Removal of the T Sensor

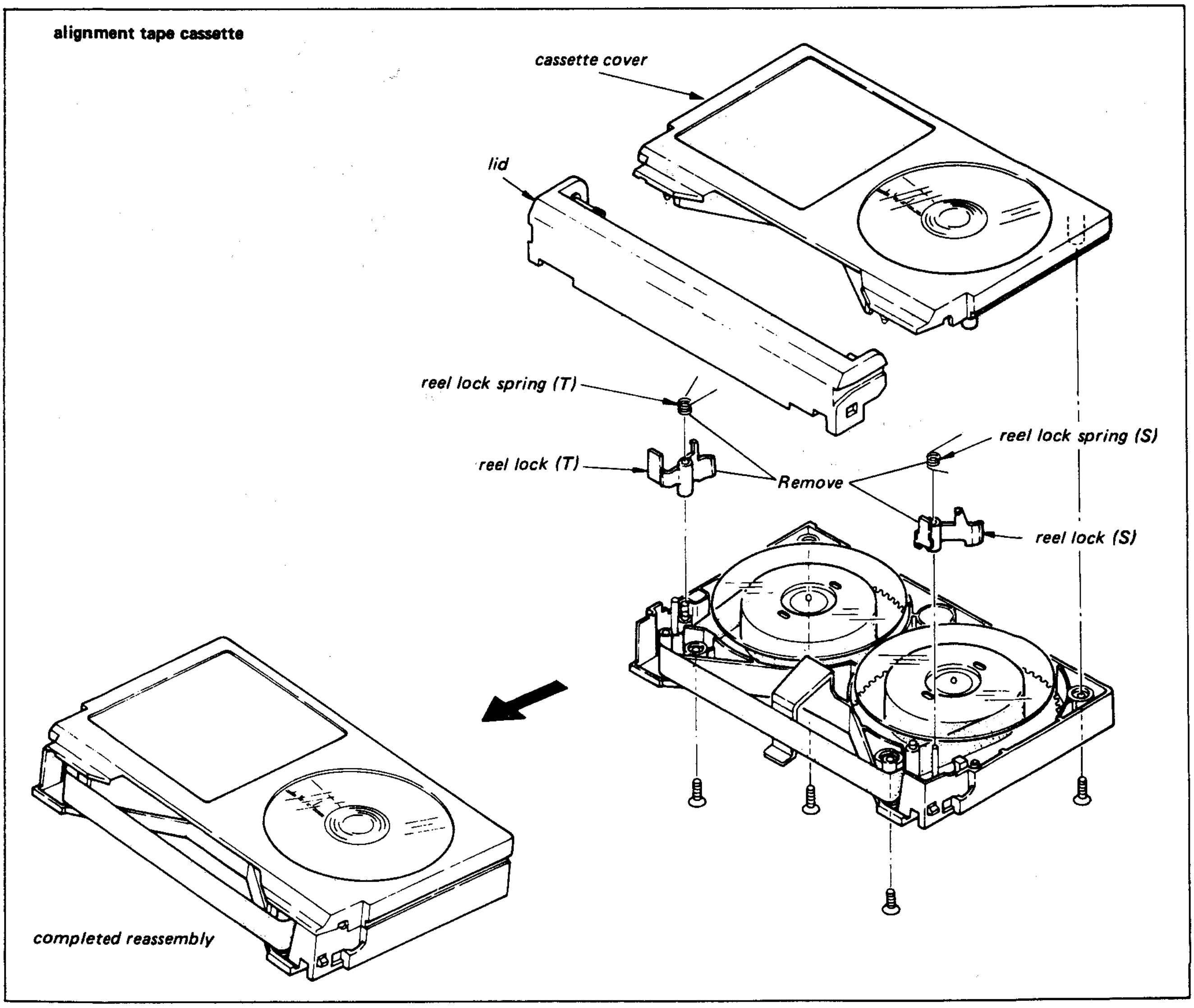
3-17-3. Replacing T sensor block

Reverse the sequence of 3-17-1.

SECTION 4
TAPE PATH ADJUSTMENT

4-1. TRACKING ADJUSTMENT

This adjustment has significant effect on picture quality in each mode and tape interchangeability, so please perform it very carefully.



alignment tape cassette
cassette cover
lid
reel lock spring (T)
reel lock (T)
Remove
reel lock spring (S)
reel lock (S)
completed reassembly

Fig. 4-1. Cassette Holder Remodeling

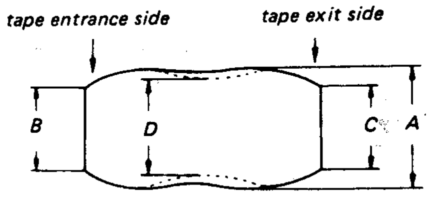
4-1-1. Preparation

1) When modifying alignment tape (KR5-3C), use caution not to dislodge the tape reels from their correct position. Refer to Fig. 4-1 and remove the four screws that secure the upper cover to the lower cover.

   Remove the upper cover and lid. Separate the lid and lid tension spring from the upper cover. Remove the two reel lock springs (T and S) and the two reel locks (T and S). Remount only the upper cover, being certain that it is properly mated with the lower cover. Secure the covers with four screws.

   Note: The cassette lid is removed. Be careful about tape damage.
   The tape sensor operates and a cassette is ejected when the tape is not loaded in the normal position.

2) Clean the tape contact surfaces (tape guides, drum, capstan shaft, pinch roller, ACE FE head surface) with chamois dampened with methanol.
3) Oscilloscope connections:
   1ch: TP301 (front panel: check terminal, VIDEO)
   2ch: TP303 (front panel: check terminal, SW PULSE)
4) Play back the tracking portion of the modified alignment tape (KR5-3C).
5) Confirm that the RF output waveform is flat, with maximum amplitude. (The waveform should increase and decrease, remaining flat, when the tracking control knob is turned back and forth.) Also, when the waveform is maximum, confirm that the RF output waveform variation and contact satisfy the specifications shown in Fig. 4-2. If they do not, follow the instructions in 6).
6) If the tracking control knob is turned and the entrance waveform does not flatten as shown in Fig. 4-3(a), perform the entrance side adjustment in 4-1-2. If the exit waveform does not flatten as shown in Fig. 4-3(b), perform the exit side adjustment in 4-1-3.


tape entrance side
tape exit side
B
D
C
A

Specifications: Tracking Control Knob at Maximum

contact: $\frac{B}{A} \geqq 0.7$

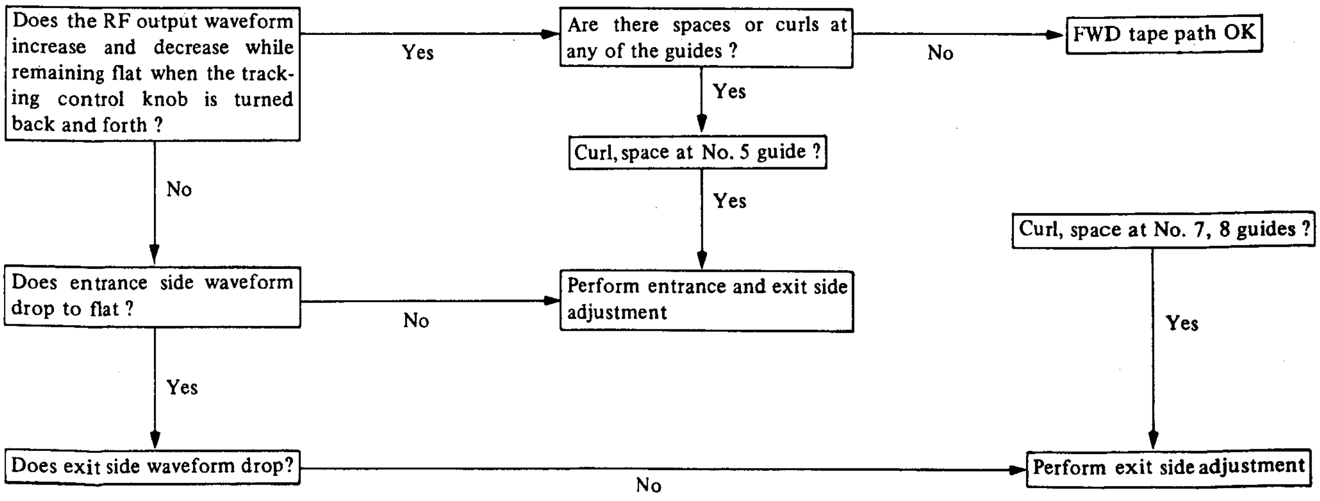
$\frac{C}{A} \geqq 0.7$

Variation: $\frac{D}{A} \geqq 0.9$

Fig. 4-2.

	BOARD	CONNECTOR & PIN NO.
RF Output Waveform	TP-38	TP301 (check terminal, VIDEO)
External Trigger	TP-38	TP303 (check terminal, SW PULSE)
Audio Out	RV-7P	AUDIO OUT CH1, CH2
Video Out	RV-7P	VIDEO OUT

Waveform Confirmation


Does the RF output waveform increase and decrease while remaining flat when the tracking control knob is turned back and forth ?
Yes
Are there spaces or curls at any of the guides ?
No
FWD tape path OK
Yes
Curl, space at No. 5 guide ?
Yes
No
Curl, space at No. 7, 8 guides ?
Does entrance side waveform drop to flat ?
No
Perform entrance and exit side adjustment
Yes
Yes
Does exit side waveform drop?
No
Perform exit side adjustment

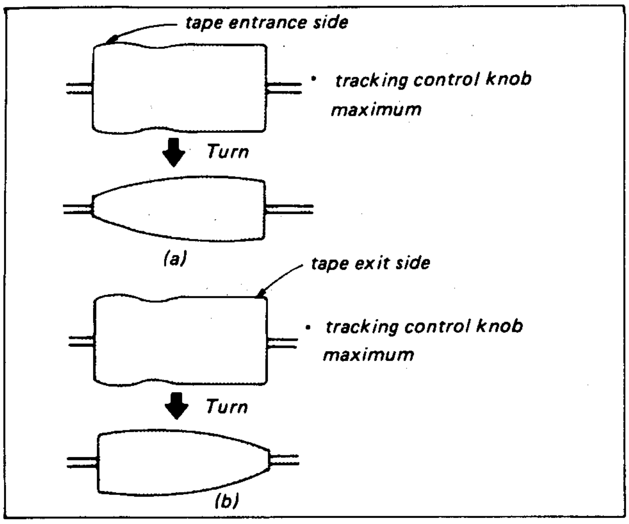

tape entrance side
• tracking control knob maximum
Turn
(a)
tape exit side
• tracking control knob maximum
Turn
(b)

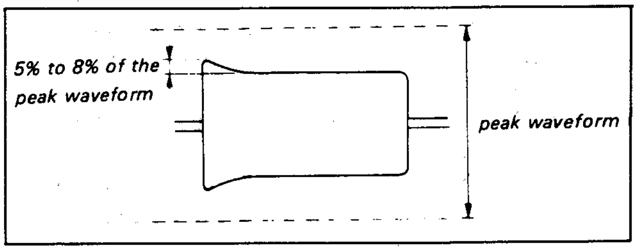
Fig. 4-3.

Note: After the indicated tape path adjustments that follow have been successfully completed using normal playback speed, operate the VTR in the Picture Search mode and look for curl at the tape guides. Readjust them if necessary. Then, finally, playback a regulator L750 tape as a check-up. See Section 4-4.

4-1-2. Entrance Side Adjustment

Always perform the exit side adjustment as well as the entrance side adjustment. Fig. 4-4 illustrates the guides and adjustment locations.

1) Turn tracking control knob clockwise to drop RF output waveform to about 60% of maximum.
2) Turn No. 6 guide counterclockwise to free tape transportation to the drum. Use a special notched screwdriver. (See section 1-8. Tools And Fixtures Required)
3) Loosen No. 5 guide lock screw ①, turn No. 5 guide so that the entrance side waveform is almost flat, as shown in the figure below, and tighten lock screw ①. (See Fig. 4-5)


5% to 8% of the peak waveform
peak waveform

Note:

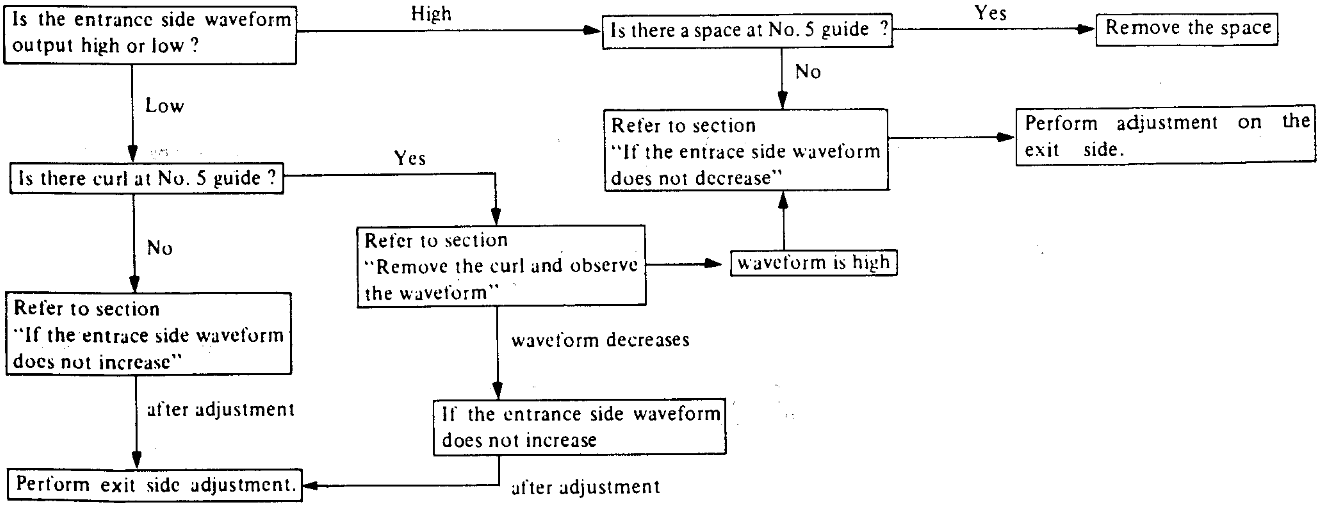
Be sure that the waveform remains as shown in the figure after tightening the lock screw ①.

4) Next lower No. 6 guide and flatten the waveform.
5) Push the tape down between No. 4 and No. 5 guides by hand, and confirm that the entrance side RF waveform returns to the original state after being lowered. If the waveform is not as illustrated, or if the waveform does not flatten, or takes too much time to flatten after the entrance side tape is pushed down, follow the procedure below to adjust.
6) Check No. 5 guide for space and curl. If space or curl exists, follow the appropriate adjustment procedure.

Note:

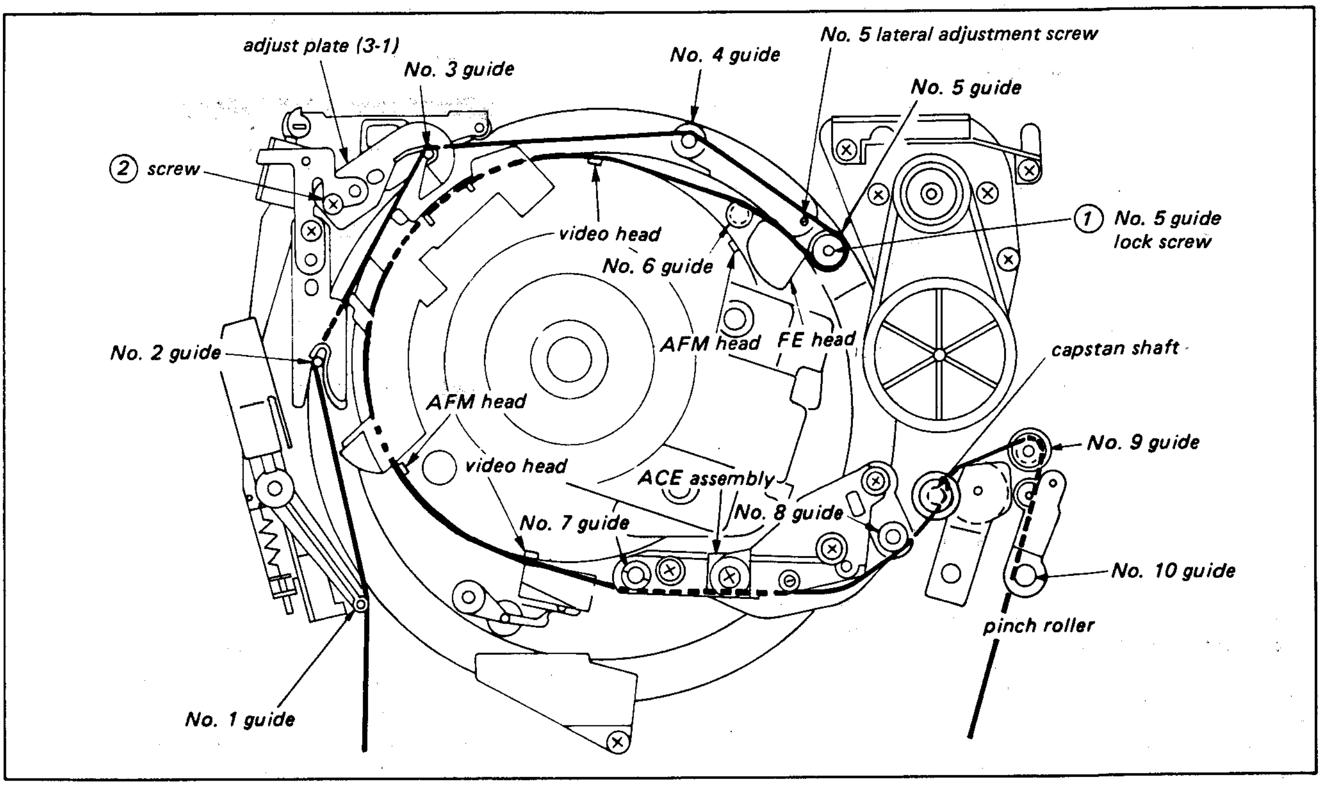
Be sure that there is tape tension upper and lower balance between No. 3 — No. 4 — No. 5 guides. Perform No. 3 or No. 5 guide lateral adjustment if necessary.

Entrance Side Flow Chart


Is the entrance side waveform output high or low ?
High
Is there a space at No. 5 guide ?
Yes
Remove the space
No
Refer to section "If the entrace side waveform does not decrease"
Perform adjustment on the exit side.
Low
Is there curl at No. 5 guide ?
Yes
Refer to section "Remove the curl and observe the waveform"
waveform is high
No
Refer to section "If the entrace side waveform does not increase"
waveform decreases
after adjustment
If the entrance side waveform does not increase
Perform exit side adjustment.
after adjustment

Note:

Upon failing to obtain the waveforms shown above, press down the tape at the entrance side, adjust as indicated below when a long time is needed for the waveform to return to the horizontal, or when it does not return at all.



adjust plate (3-1)
No. 3 guide
No. 4 guide
No. 5 lateral adjustment screw
No. 5 guide
② screw
① No. 5 guide lock screw
video head
No. 6 guide
AFM head
FE head
No. 2 guide
capstan shaft
AFM head
No. 9 guide
video head
ACE assembly
No. 8 guide
No. 7 guide
No. 10 guide
pinch roller
No. 1 guide

Fig. 4-4. Tape Guide Layout

[If the waveform entrance output does not increase]

1) Check to make sure tape upper and lower tension is equal between No. 3 — No. 4 — No. 5 guides. If it is not, perform No. 3 or No. 5 guide lateral adjustment.

   Note:

   Be sure there is no space at No. 4 guide lower flange.

2) Raise No. 4 guide lower flange to raise entrance output.

   Note:

   No. 4 guide lower flange may be raised 0.4 mm from its lowest position.

3) If the waveform does not increase in step 2), turn No. 5 lateral adjustment screw slightly (less then 360°) counterclockwise.

[If the waveform entrance output does not decrease]

1) Move the No. 3 guide adjust plate away from the drum, and tighten screw ② at the point just before the lower tension of the tape loosens.
2) If the tape is touching No. 4 guide lower flange, lower the flange. If it is floating, adjust No. 5 guide laterally.

[If there is space at No. 5 guide]

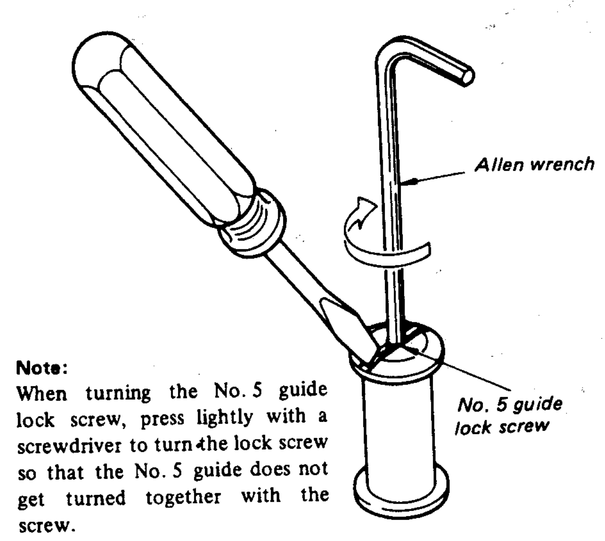
Turn No. 4 guide counterclockwise to raise the tape and remove the space at No. 5 guide.

Note:

Be careful not to create a large curl at the bottom of No. 4 guide.

[If there is curl]

1) When there is a space at the bottom of No. 4 guide: Lean the adjust plate of No. 3 guide toward the outside until the point just before the lower tape tension loosens.
2) When there is curl but no space at the bottom of No. 4 guide:
   - i) Confirm that No. 4 guide is not raised too high. Turn clockwise to lower if necessary.
   - ii) If this does not slove the problem, tighten No. 5 guide lateral adjustment screw by turning clockwise until the curl disappears.



Note:
When turning the No. 5 guide lock screw, press lightly with a screwdriver to turn the lock screw so that the No. 5 guide does not get turned together with the screw.

Fig. 4-5.

4-1-3. Exit Side Adjustment

1) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
2) Raise No. 7, 8 guides to free the tape transportation, and check the waveform. (This waveform is called "exit free waveform".)

Note:
Be careful not to raise the guides too much. They should be raised about 0.3 mm, and also, the tape should not touch the ACE head bottom flange. (Fig. 4-6)

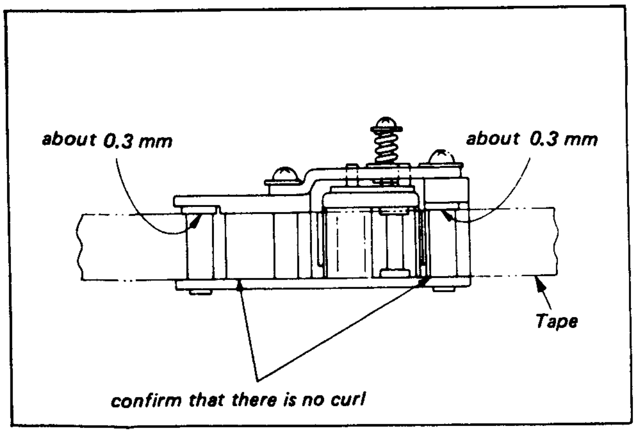


Fig. 4-6.

   - i) If the exit free waveform is within the range illustrated in Fig. 4-7(a), (b), proceed with exit side adjustment.
   - ii) If it is not within the specified range, follow the adjustment procedure in 4-3.

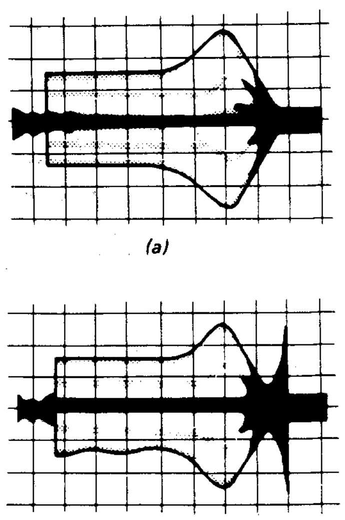


Fig. 4-7.

3) Flatten the waveform with No. 7 guide, and match No. 8 guide to the tape. (Lower the guide to the point just before the waveform changes, and where there is no curl.) At this time, the exit side waveform may rise slightly, so lower No. 7 guide again to flatten it, and match No. 8 guide to the tape.
4) Confirm that there is no curl at No. 7, 8 guides in forward mode.
5) Confrim that curl and space do not appear at No. 8 guide in REVIEW mode. If curl or space appears, adjust with No. 9 guide.

Note: As the No. 5 and No. 9 guides are easily broken because they are made of ceramics, do not tighten the lock screw more than that is necessary.

4-2. ADJUSTMENT AFTER REPLACEMENT OF THE ACE ASSEMBLY

Perform the following adjustments after removing or replacing the ACE assembly.

4-2-1. Tracking Adjustment

1) Position the parallel plate (Fixture, SL-0657) at shown in Fig. 4-8, and turn audio head lateral adjustment screw ① to adjust the audio head vertically.

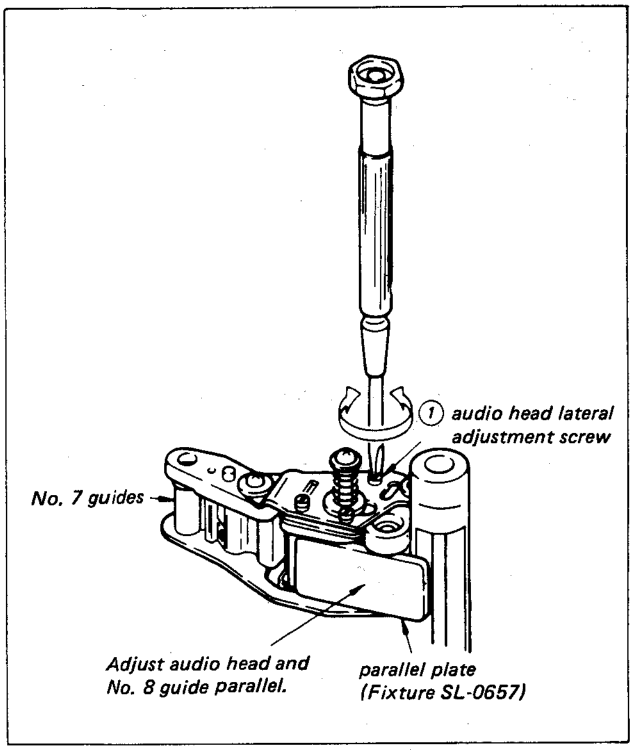

① audio head lateral adjustment screw
No. 7 guides
Adjust audio head and No. 8 guide parallel.
parallel plate (Fixture SL-0657)

Fig. 4-8.

2) Turn the tracking control knob counterclockwise to lower the RF output waveform to about 60% of the maximum.
3) Play back the tracking portion of the alignment tape (KR5-3C) raise No. 7, 8 guides about 0.3mm and check the exit free waveform of the RF output waveform.

   Note:
   Be sure that the tape does not touch the bottom flange of the ACE assembly.

   i) If the waveform is within the range illustrated in Fig. 4-7(a), (b), proceed with the adjustment.
   ii) If the exit free waveform appears as shown in Fig. 4-9, turn the ACE lateral adjustment screw clockwise until the waveform is within the range illustrated in Fig. 4-7(a), (b).
   iii) If the exit free waveform appears as shown in Fig. 4-10, turn the ACE lateral adjustment screw counter-clockwise to obtain the waveform shown in Fig. 4-9, then turn clockwise again until the waveform is within the range shown in Fig. 4-7.

4) Turn the No. 7 guide to flatten the waveform, and match the No. 8 guide to the tape. (Lower the guide until the point just before curl appears at No. 8 guide flange.)
5) If the RF output waveform is as shown in Fig. 4-9, where the exit side is not flat, lower No. 7, No. 8 guides again to flatten it.

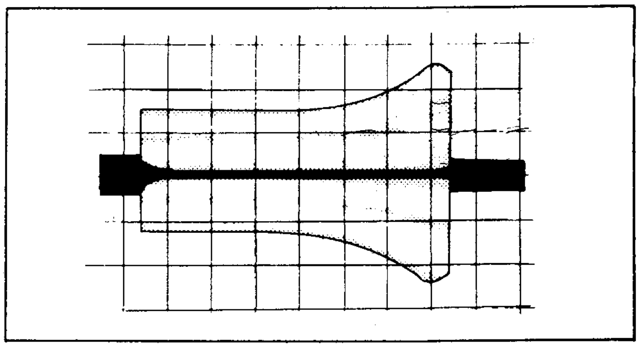


Fig. 4-9.

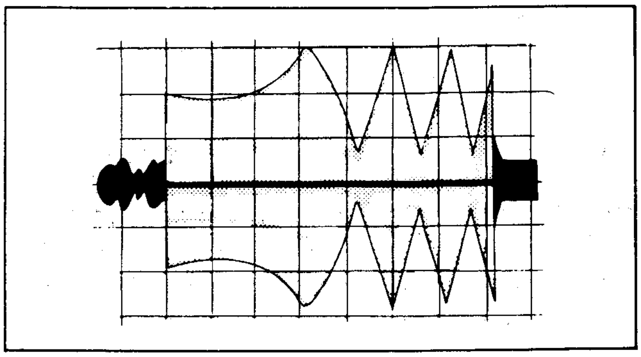


Fig. 4-10.

4-2-2. Audio head (ACE assembly) azimuth adjustment

Audio head azimuth affects phase difference of the right and left channels in stereo. Since the track width is about two fifths of monaural, azimuth loss is small when azimuth error is the same. Therefore, only phase adjustment of the two channels is to be performed as azimuth adjustment.

Mode: playback
Signal: alignment tape, color bars, 5kHz (KR5-3C)
Oscilloscope: CH-1 AUDIO OUT CH1/L terminal
CH-2 AUDIO OUT CH2/R terminal

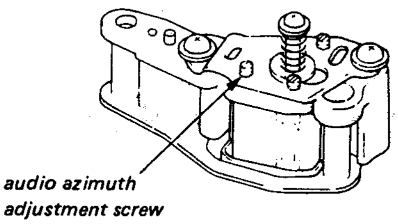

audio azimuth
adjustment screw

Fig. 4-11.

[Adjustment procedures]

1. In dual-beam mode

1) Zero the phase differnce of CH-1 and CH-2 signals with the azimuth adjusting screw.

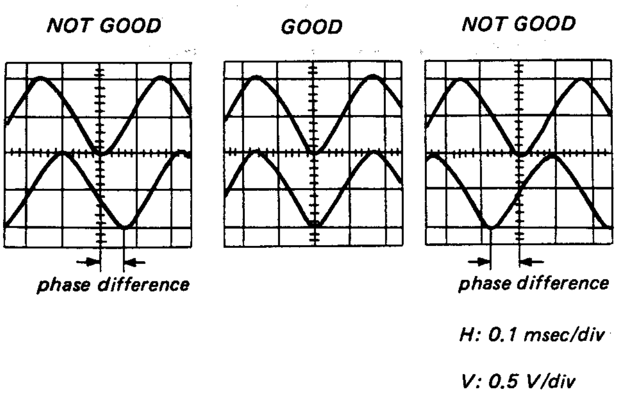

NOT GOOD
GOOD
NOT GOOD
phase difference
phase difference
H: 0.1 msec/div
V: 0.5 V/div

Fig. 4-12.

2) Requirement on phase differnce angle: less than 45°

2. In X-Y mode with Lissajous' figures

1) Zero the phase difference of CH-1 and CH-2 signals with the azimuth adjusting screw.

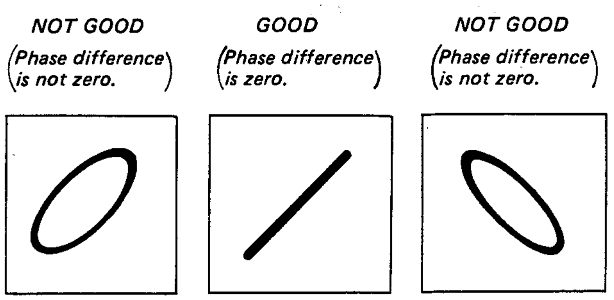

NOT GOOD
(Phase difference is not zero.)
GOOD
(Phase difference is zero.)
NOT GOOD
(Phase difference is not zero.)

Fig. 4-13.

2) Requirement on phase difference angle: less than 45°

The angle of phase difference is given by $\sin^{-1}(B/A)$. To meet that the angle of phase difference be less than 45°. it is sufficient that $B/A < 0.7$.

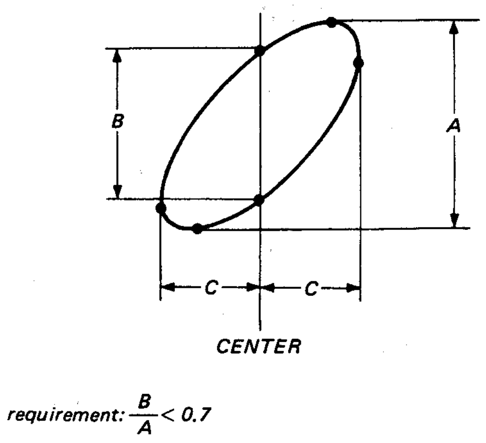

B
A
C
C
CENTER
requirement: $\frac{B}{A} < 0.7$

Fig. 4-14.

4-2-3. CTL Head (ACE Assembly) Position Adjustment

This adjustment is both mechanical and electric: mechanically, it is the adjustment of the CTL head position, and electrically, it is the tracking control center adjustment. The procedure involves performing the electrical adjustment first, then the head position adjustment.

1) Connect the oscilloscope as follows:
   1ch: front panel: check terminal, VIDEO
   2ch: AUDIO OUT CH1 or CH2
   External trigger: front panel: check terminal, SW PULSE
2) Play back the tracking portion of the alignment tape (KR5-3C).
3) Turn the tracking control knob back and forth, and confirm that the output waveform level is maximum at the center click position, and that the 0 level of the audio signal is at the point where the RF output waveform Bch waveform appears, as shown in Fig. 4-15.
   If adjustment is necessary, proceed as follows.

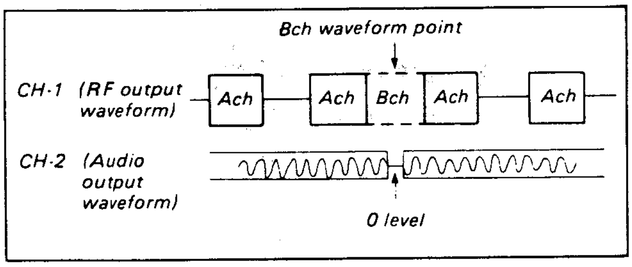


Fig. 4-15.

4) Tracking Control Center Adjustment
5) CTL Head Position Adjustment
   Set the tracking control knob at the center detent position and loosen the two ACE assembly position adjustment screws ①. As shown in Fig. 4-16 slide the ACE assembly with a screwdriver until it is in the position shown in Fig. 4-15 and the RF output waveform is maximum. Tighten the screws ① when this position is obtained.
6) Replay the color bars of the alignment tape (KR5-2C) and check the picture quality.

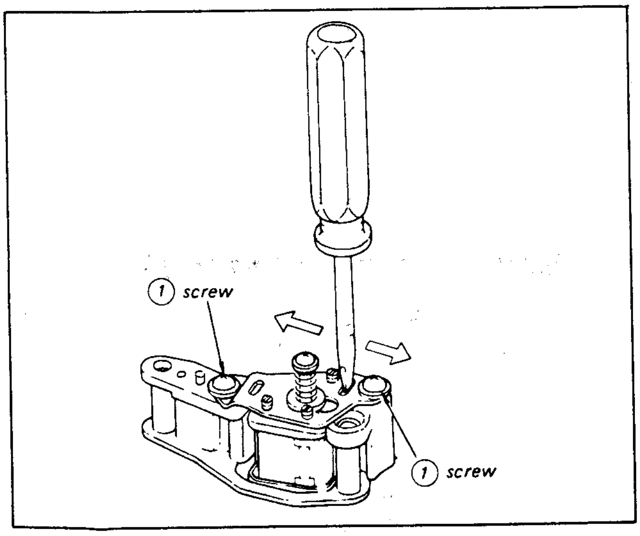


Fig. 4-16.

4-2-4. Audio Head (ACE Assembly) Height Adjustment

- The core is placed in position with respect to the tape guide flange while the ACE assembly is being built. Height adjustment is thus unnecessary during replacement except that the difference in signal levels between 2 channels is so remarkable that the difference cannot be corrected by adjusting the circuit parameters.
- Set the BNR switch at OFF and then start adjustment.

1) Perform the exit side tracking adjustment.
2) Perform azimuth adjustment for the audio head (ACE assembly).
3) Mark the currently set positions for the audio-head height adjusting screw and the lateral adjusting screw shown in Fig. 4-17, and the azimuth adjusting screw shown in Fig. 4-11.

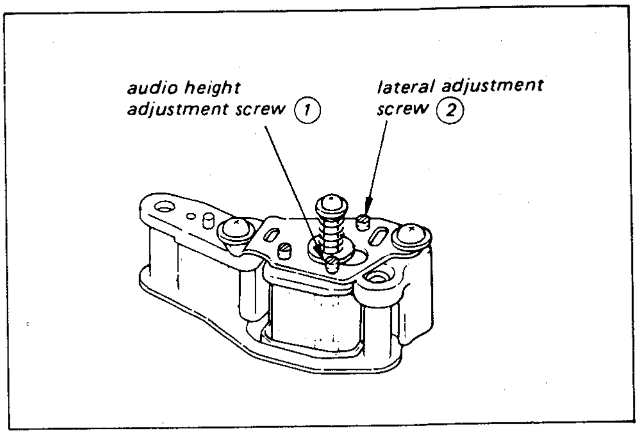


Fig. 4-17.

4) Turn both the audio-head height adjusting screw and lateral adjusting screw at right angle counterclockwise.

   Note:
   Turn them in excess of the right angle counterclockwise and return them at right angle.
5) Turn the azimuth adjusting screw at right angle counterclockwise.
6) Input from AUDIO LINE IN the signal (333Hz) which becomes −30dBs with TP101 (TP201) on AM-6 board, and adjust RV104 (RV204) so that the TP102 (TP202) level becomes −5dBs ±0.1dB in E-E mode.
7) Set the output signal in channel 1 (TP102 on the AM-6 board) at −5dB ±0.2dB by adjusting RV105 (PB LEVEL CH1) on the AM-6 board, playing back the alignment tape (KR3-1C).

8) Turn both the audio-head height adjusting screw and head tilt adjusting screw at 180 degrees clockwise (which are turned by 90 degrees from the marked position clockwise).
Turn the azimuth adjusting screw at 180 degrees counterclockwise (which is turned by 90 degrees from the marked position counterclockwise).

Note:
Loosen the screws in accordance with the procedure of item 4).

9) Set the output signal in channel 2 (TP202 on the AM-6 board) at –5dB ±0.2dB by adjusting RV205 (PB LEVEL CH2) on the AM-6 board, playing back alignment tape (KR3-1C).

10) Return the screws at the marks for 3 types of screws.
11) Perform azimuth adjustment of the audio head (in the ACE assembly).
12) Confirm that the difference in signal levels between 2 channels is 2dB or less, playing back in the tracking section of alignment tape (KR3-5D).
If the difference in signal levels between 2 channels is greater than 2dB, perform adjustment in accordance with the following procedures.
    i) When the signal leve in channel 1 is greater than that in channel 2.
    Turn the audio-head height adjusting screw, lateral adjusting screw, and azimuth adjusting screw by the same angle counterclockwise until the difference in signal levels becomes 1.5dB or less.

    Note:
    Turn the respective screws at 30 degrees and check if the difference in signal levels becomes 1.5dB or less. If the difference in signal levels approaches 1.5dB, perform fine adjustment by turning the screws clockwise. Do not turn the screws counterclockwise when the screws are finally set during fine adjustment.

    ii) When the signal level in channel 2 is smaller than that in channel 1.
    Perform adjustment in the same way as step i), except that the screws are to be turned in the reverse direction to step i).
    iii) Perform azimuth adjustment of the audio-head (ACE assembly) after completion of step i) or ii).

4-3. ADJUSTMENT AFTER REPLACEMENT OF THE CAPSTAN MOTOR

1) Perform the vertical adjustment of the capstan shaft according to 3-6. Replacement and Adjustment of Capstan Motor.
2) Play back the tracking portion of the alignment tape (KR5-3C).
Connect the oscilloscope as follows:
1ch: TP301 (front panel: check terminal, VIDEO)
2ch: TP303 (front panel: check terminal, SW PULSE)
3) Turn the tracking control knob clockwise to lower the RF output waveform to about 60% of the maximum.
4) Raise No. 7, 8 guides a little, and check the exit free waveform.
    i) If the exit free waveform is within the range indicated in Fig. 4-18(a), (b), proceed from step 5).

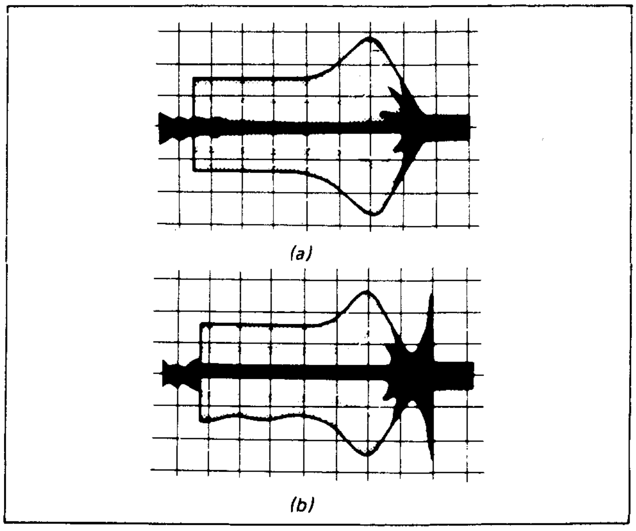

(a)
(b)

Fig. 4-18.

    ii) If the peak of the exit free waveform is smaller than that illustrated in Fig. 4-18(a) (e.g. Fig. 4-19), loosen the lock screw, then turn the capstan adjustment screw until the waveform is within the specified range.

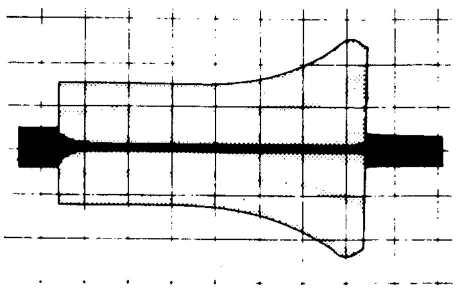


Fig. 4-19.

iii) If the peak shape of the exit free waveform differs from that shown in Fig. 4-18(b) (e.g. Fig. 4-20), loosen the lock screw, then turn the capstan adjustment screw clockwise until the waveform is within the specified range.

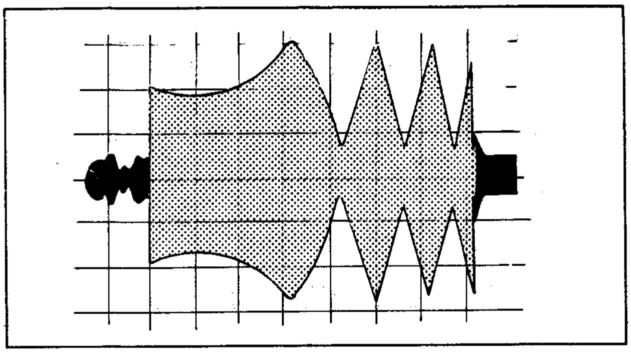


Fig. 4-20.

Note:
After turning the capstan adjustment screw, wait until the waveform stabilizes (about 10 — 15 seconds) before continuing with the adjustment.

5) Lock the capstan lock screw. (Turn clockwise until is stops, then turn about 30° more. At this point, the exit free waveform will change slightly, and if it goes out of the range shown in Fig. 4-18(a), (b) return to step 4) and readjust.
6) Flatten the waveform with No. 7 guide, and match No. 8 guide to the tape. If the exit waveform rises, flatten it again with No. 7 guide and match No. 8 guide to the tape again.
7) Confirm and adjust according to 4-1-3, exit side adjustment procedure items 4), 5).

Note:
Check with L750 tape.

4-4. THIN TAPE MOVEMENT CHECK METHOD DURING TAPE PATH ADJUSTMENT

After confirming the tape path by using the procedures of section 4-1 through 4-3, check the thin tape movement by the procedure given below.

1) Prepare one reel of the commercial L-750. Remove the cassette lid with reference to Fig. 4-1.

2) Run L-750 prepared in the procedure 1 in the PLAY mode and check the following points;

    i) Entrance Side
    Check if the tape bends and is damaged on the No. 4 guide bottom flange, the No. 5 guide top flange and the No. 6 guide top flange. (The curl of the tape is allowed), but the bend of the tape is not allowed.) (Fig. 4-21)

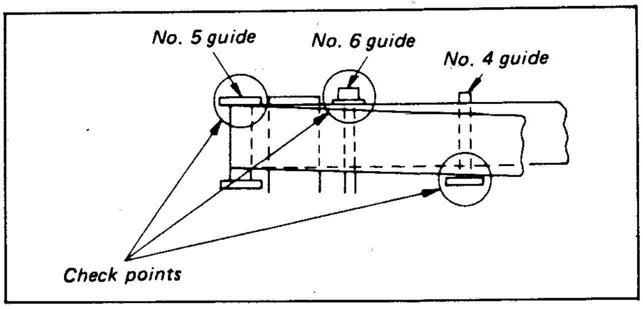


Fig. 4-21.

    ii) Exit side
    Check if the tape bends and is damaged on the No. 7 guide top flange, the No. 8 guide top flange and the No. 10 guide top and bottom flanges. (The curl of the tape is allowed, but the bend of the tape is not allowed.) (Fig. 4-22)

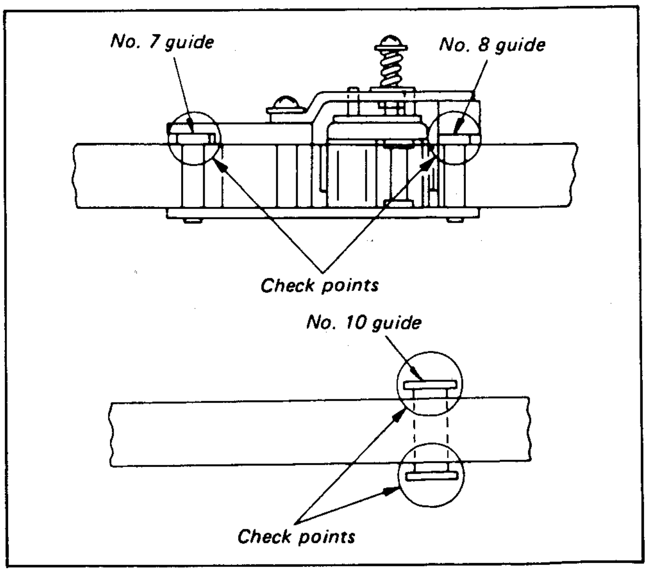


Fig. 4-22.

3) If the tape did not run normally in step 2, readjust the tape path by using.

    a) The tape did not run normally on the entrance side, refer to 4-1-2.

    b) The tape did not run normally on the exit side, refer to 4-1-3.

4-5. Self-Recorded RF Output Waveform Check (VIDEO)

1) Set the tracking control knob to center click.
2) Record an on-the-air signal on an L-500 tape, rewind and play back.
3) Confirm that the RF output waveform satisfies the conditions in Fig. 4-23. If not, readjust tape path.

① $\frac{\text{E min}}{\text{E max}} \geqq 65\%$

② at 80% interval, $\frac{\text{E}}{\text{E max}} \geqq 80\%$

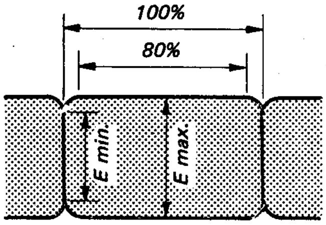


Fig. 4-23.

4-6. Pairing Check (VIDEO)

1) Set the tracking control knob to center click.
2) Record an on-the-air signal on an L-500 tape, rewind and play back.
3) Check CH-A, CH-B RF output levels.
4) Match up CH-A and CH-B RF output levels with RP-18 board CH balance (RV-302). (Fig. 4-24)

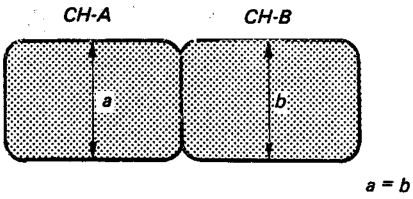


Fig. 4-24.

5) Adjust oscilloscope V GAIN so that the RF output waveform on the oscilloscope is 5cm.
6) Turn the tracking control knob to the right, as seen from the front, and make the large output waveform 2cm. (Fig. 4-25)
7) At this time, check that the small output channel's output satisfies the specification. Specification: Small output CH 1.0 – 2.0cm (Fig. 4-25ⓐ)
8) Return oscilloscope V GAIN to its original state, and return RF output level to the state in 3) with CH balance.

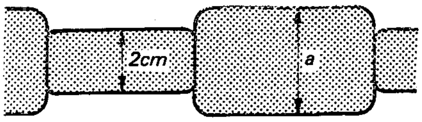
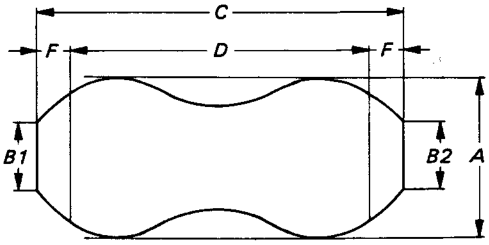


Fig. 4-25.

4-7. BETA HI-FI RF OUTPUT WAVEFORM CHECK

1) Disconnect connector CN301 from the RP-18 board. (Record Beta hi-fi only without recording picture.)
2) Rotate the Beta-hi-fi REC knob (L, R) to the minimum position.
3) Record in a no-signal state.
4) Play back the recorded part and check that the RF output satisfies the conditions described in Fig. 4-26. (Operate this procedure for both Ach and Bch)



B1 ≧ 0.8A
B2 ≧ 0.8A
The output of the range D
shall be more than 0.85A
(provided D ≧ 0.8C, F ≦ 0.1C)

NOTE: Tracking control knob is at the center click position.

Fig. 4-26.

	BOARD	CONNECTOR, TP & PIN No.
RF Output Waveform (Ach)	AF-3P	TP-3
RF Output Waveform (Bch)	AF-3P	TP-4
External Trigger	AF-3P	CN011-1P

SECTION 5
ELECTRICAL ALIGNMENT

All the electrical alignment can be performed by using the equipment mentioned below, the alignment tape, and the PAL colour bar signal (100%).

[Equipment Required]

(1) PAL Colour Monitor TV
(2) Oscilloscope, Dual-trace, Bandwidth... more than 10 MHz with delay mode
(3) Frequency Counter
(4) PAL Colour-Bar Generator
(5) Digital voltmeter
(6) VOM (20 kΩ/V)
(7) Audio Signal Generator
(8) Audio level meter (VTVM) Zin: more than 100kΩ
(9) Attenuator
(10) Spectrum analyzer
(11) Alignment Tape, type: KR5-2C, Code No. 8-969-995-22
KR5-10C, Code No. 8-192-508-01
KR4-1C, Code No. 8-969-994-31
KR3-1C, Code No. 8-969-993-31
KR3-4F, Code No. 8-969-993-84
(12) Alignment Tool (Adjusting screwdriver for semi-fixed resistors and coils)
Jig No. SL-0001, Code No. J-6080-001-A

[Setting up for adjustment]

Since the video signal is used in adjustments described in this chapter, connect a color pattern generator to the VIDEO IN terminal of the SLO-1700. The VIDEO IN signal must meet the requirements shown in Fig. 5-1. Connect an oscilloscope to VIDEO OUT terminal and check the video output signal. The requirements are that (1) the amplitude of the sync signal is approximately 0.3Vp-p and (2) that of the video signal is approximately 0.7Vp-p and (3) that the amplitude of the color burst is approximately 0.3V ±0.1Vp-p. Also, check that there are no spikes in the portion of the sync signal.
Fig. 5-1 shows the video (color bar) signal used in the adjustment.

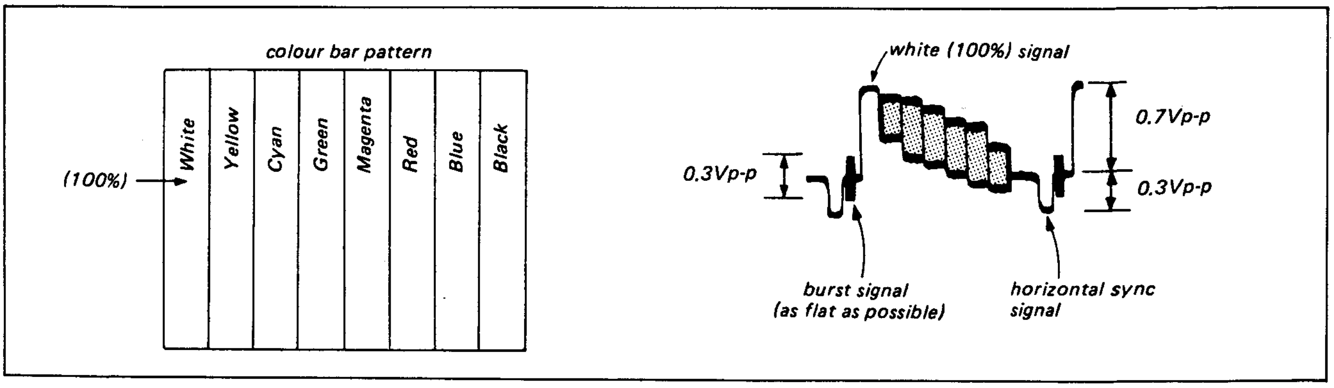


Fig. 5-1. Video (colour-bar) signal

[Alignment Tape]
KR5-2C

	Video signal	Audio signal	Playing time	Use for
1.	Colour bars	3 kHz – 5 dB	5 min	General performance, tape speed checks, switching position adjustment.
2.	Monoscope	333 Hz – 25 dB	5 min	Video head dihedral adjustment.
3.	RF sweep	5 kHz – 25 dB	5 min	
4.	Tracking 1 MHz (CH-B) *1 (Channel B is inserted in every 3 frames.)	1 kHz – 5 dB *2 (Signal is dropped out in the positions where channel B is inserted.)	5 min	

KR5-10C (Beta hi-fi Audio)

	Video signal	Audio signal	Playing time	Use for
	Colour bars	Beta hi-fi 400 Hz ±66.7 kHz DEV	30 min	Beta hi-fi Audio level, balance adjustment.

KR4-1C

	Video signal	Audio signal	Playing time	Use for
	RF sweep	————	130 min	Video frequency characteristic adjustment. marker: 1, 2, 3.58, 4.5, 5.2 MHz

KR3-1C

	Video signal	Audio signal	Playing time	Use for
	————	333 Hz −10 dB	130 min	Audio level adjustment

KR3-4F

	Video signal	Audio signal	Playing time	Use for
	————	−30 dB 50, 100, 333, 7k, 10kHz	130 min	Audio frequency characteristic check.

[Alignment Tool for Semi-fixed Variable Resistors and Coils]
Semi-fixed variable resistors and inductances should be adjusted with the alignment tool exclusively prepared for the adjustment of the components. A common screwdriver is too large for adjusting the components from the conductor side of a printed circuit board.

The metal blade of the alignment tool is used for variable resistors and trimmer capacitors and the plastic tip is used for variable inductances.

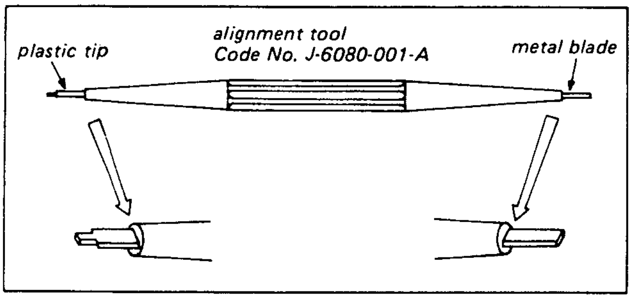

plastic tip
alignment tool
Code No. J-6080-001-A
metal blade

Fig. 5-2. Alignment tool

[Required levels and Impedances of Input and Output]
Video

Input VIDEO IN: BNC connector
$1\text{Vp-p}\ ^{+1.0}_{-0.5}\text{Vp-p}$
75Ω unbalanced, sync negative
VIDEO OUT: BNC connector
1Vp-p ±0.1Vp-p
75Ω unbalanced, sync negative

Audio
Input AUDIO IN: phono jack
47kΩ, −10dBs
AFM IN: phono jack
47kΩ, −10dBs
(0dBs = 0.775Vrms)
Output AUDIO OUT: phono jack
Load impedance more than 10kΩ
−10dBs with 47kΩ load unbalanced
AFM OUT: phono jack
Load impedance more than 10kΩ
−10dBs with 47kΩ load unbalanced
PHONES: STEREO standard jack
−26dBs, 8Ω

[Colour Bar Signal]
The 100% colour bar signal recorded on the Alignment tape is shown in Fig. 5-3.

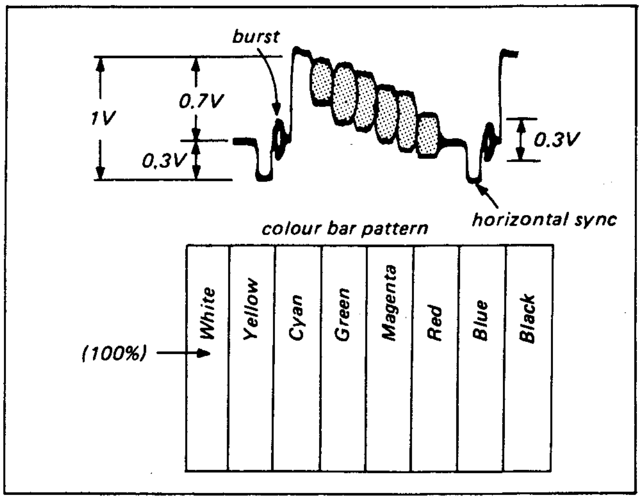
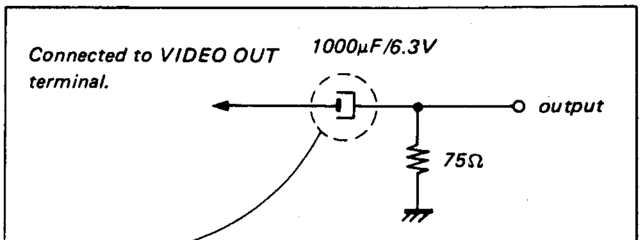

burst
1V
0.7V
0.3V
0.3V
horizontal sync
colour bar pattern
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black

Fig. 5-3. Colour bar signal recorded on the alignment tape

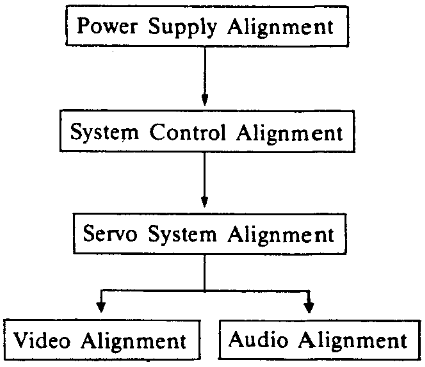
[75Ω Terminating Method]
To terminate the video output terminal follow the steps shown in Fig. 5-4.


Connected to VIDEO OUT terminal.
1000µF/6.3V
output
75Ω

Note: *The machine may be damaged if it is terminated in 75Ω before cutting the DC component.*

Fig. 5-4. 75Ω terminating circuit

[Adjustment procedure]
Adjust in the order given below.


Power Supply Alignment
System Control Alignment
Servo System Alignment
Video Alignment
Audio Alignment

5-1. POWER SUPPLY CHECK (Power Block)

Measure an E-E mode (power supply switch ON).

UNSWD	−12V	12.3 ±0.3V	Pin ① of CN652
UNSWD	12V(M)	12.6 ±0.3V	Pin ⑤ of CN656
UNSWD	12V(E)	12.6 ±0.3V	Pin ② of CN654
UNSWD	12V(IS)	12.6 ±0.5V	Pin ⑧ of CN656
UNSWD	5V	5.8 ±0.5V	Pin ① of CN655
SWD	12V	12.6 ±0.1V	Pin ① of CN654
SWD	9V	9.1 ±0.1V	Pin ③ of CN656
SWD	5V	5.0 ±0.3V	Pin ① of CN656

5-2. SYSTEM CONTROL CHECK (SC-2 Board)

1. Clock Frequency Check

Mode: E-E
Signal: None
Frequency counter: Pin ㉕ of IC610
Check: f: 4MHz
V_1: less than 0.8V V_2: more than 3.4Vp-p

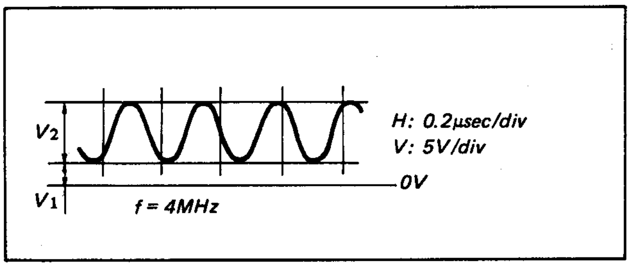


Fig. 5-5. Clock frequency

5-3. SERVO SYSTEM ALIGNMENT

Alignment Sequence

1. Drum and capstan servo alignment
2. Reel servo system alignment

5-3-1. Drum and Capstan Servo Alignment

1) Drum Free Speed Adjustment (SS-29 Board)
Mode: Playback
Signal: Alignment tape (KR5-2C) colour bar or monoscope
Oscilloscope: CH-1 TP306 (Pin ⑬ of IC301)
CH-2 TP304 (Pin ㊴ of IC301)

[Alignment method]

Adjust to 553.41µsec ±50µsec with RV302. (See Fig. 5-6.)

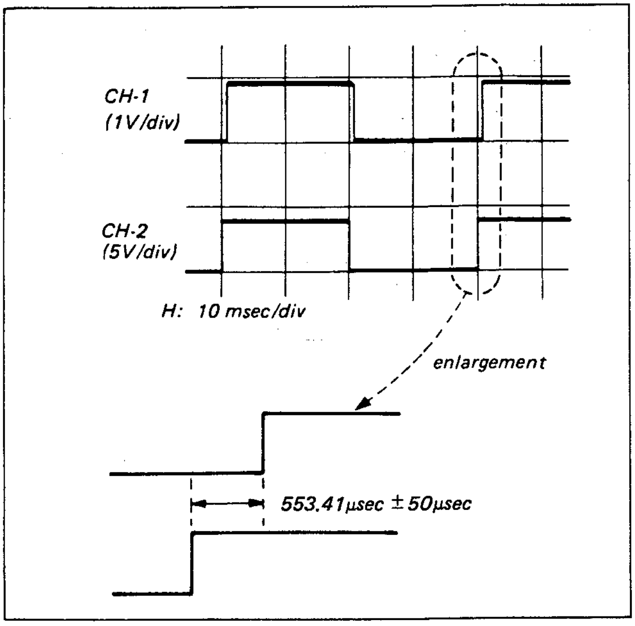


Fig. 5-6. Drum free speed adjustment

2) PICTURE SEARCH, Drum Free Speed Adjustment (SS-29 Board)
Mode: PICTURE SEARCH
Signal: Alignment tape (KR5-2C) colour bar

[Adjustment method]

i) Adjust with RV303 to prevent color shear on the monitor screen during PICTURE SEARCH (FWD).
ii) Adjust with RV318 to prevent color shear on the monitor screen during PICTURE SEARCH (REW).

3) Capstan DC Bias Adjustment (SS-29 Board)
Mode: playback
Signal: Alignment tape (KR5-2C) colour bar or monoscope
Oscilloscope: TP302 (Pin ⑳ of IC301)

[Adjustment method]

Adjust the duty (ratio for A and B) to 50% ±3% with the RV309. (See Fig. 5-7.)

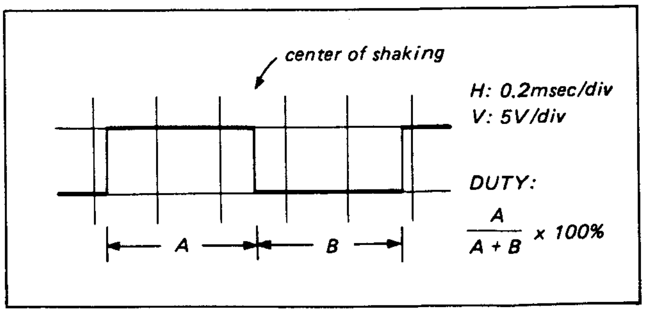


Fig. 5-7. Capstan DC bias adjustment

4) PICTURE SEARCH, Capstan DC Bias Adjustment (SS-29 Board)
Mode: PICTURE SEARCH (FWD)
Signal: Alignment tape (KR5-2C) colour bar or monoscope

[Adjustment method]

Adjust with RV310 so that four noise lines appear and the noise flow becomes less than two lines in one second on the monitor TV screen.

5) Tracking Center Adjustment (SS-29, SC-3 Board)
Mode: Playback
Signal: Alignment tape (KR5-2C) colour bar or monoscope
Oscilloscope: CH-1 TP306 (Pin ⑬ of IC301)
CH-2 TP303 (Pin ⑮ of IC301)

[Adjustment method]

- i) Set the TRACKING knob to the center click position.
- ii) Adjust to 7.05msec ±0.05msec with RV305. (See Fig. 5-11.)
- iii) Change the tape to a recordable one and set up the RECORD mode.
- iv) Adjust to 7.05msec ±0.05msec with RV314. (See Fig. 5-8.)

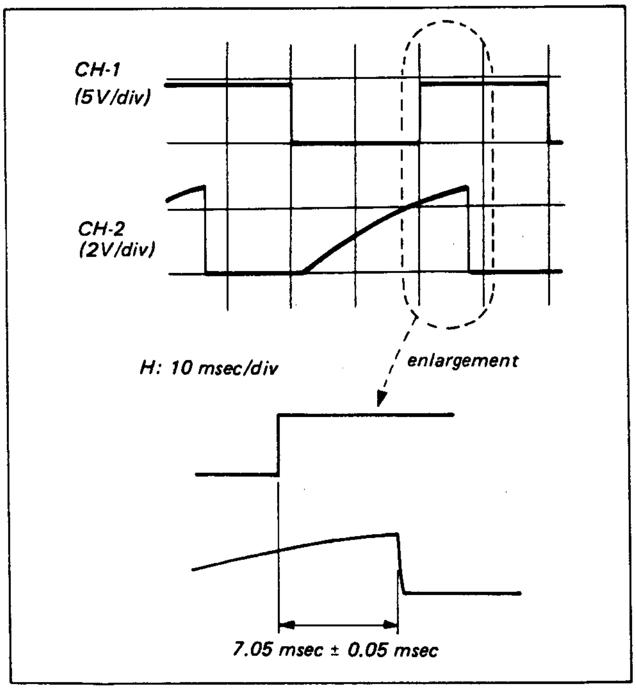

CH-1
(5V/div)
CH-2
(2V/div)
H: 10 msec/div
enlargement
7.05 msec ± 0.05 msec

Fig. 5-8. Tracking center adjustment

6) RF Switching Position Adjustment (SS-29 Board)
Mode: Playback
Signal: Alignment tape (KR5-2C) colour bar or monoscope
Oscilloscope: CH-1 TP304 (Pin ㊴ of IC301)
CH-2 Pin ㊵ of IC301

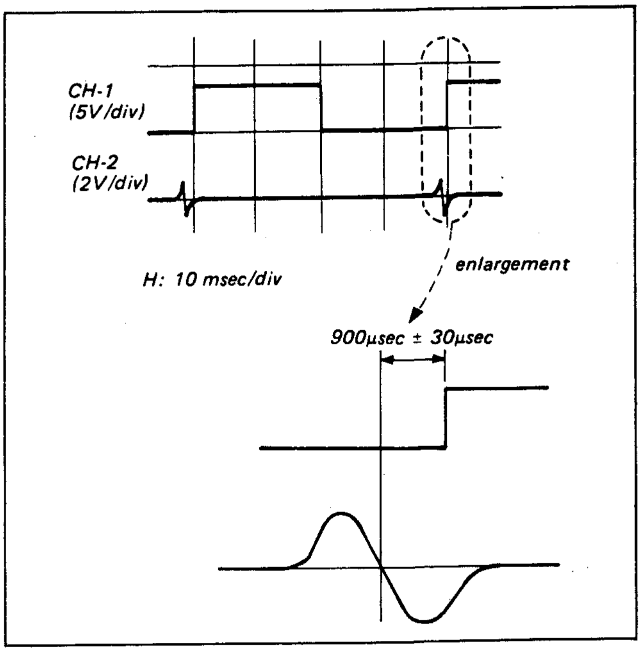

CH-1
(5V/div)
CH-2
(2V/div)
H: 10 msec/div
enlargement
900μsec ± 30μsec

Fig. 5-9. RF switching position adjustment (1)

[Adjustment method]

- i) Adjust to 900 μsec ± 30 μsec with RV301 (See Fig. 5-9.)
- ii) Change connection of CH-2 only to Pin ㉜ of IC301.
- iii) Adjust to 900 μsec ± 30 μsec with RV304 (See Fig. 5-10.)

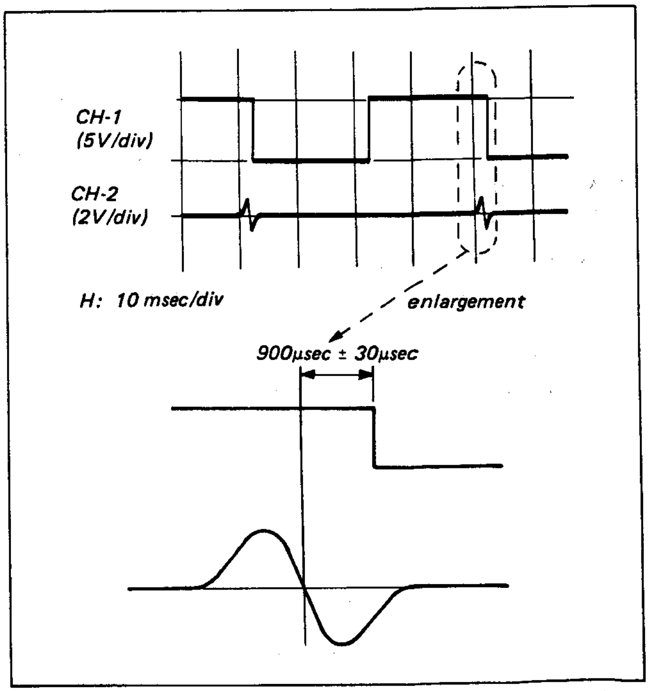

CH-1
(5V/div)
CH-2
(2V/div)
H: 10 msec/div
enlargement
900μsec ± 30μsec

Fig. 5-10. RF switching position adjustment (2)

7) FG Amp DC Bias Adjustment (SS-29 Board)
Mode: Playback
Signal: Alignment tape (KR5-2C) colour bar or monoscope

[Adjustment method]

i) Measure the DC voltage (V1) at pin ⑪ of IC306 (TP308) using a digital voltmeter.
ii) Short pin ⑧ of IC314 (TP317) and TP313 and remeasure the DC voltage (V2) at pin ⑪ of IC306 (TP308).
iii) Adjust with RV316 to obtain $|V1 - V2| \leqq 3mV$.
iv) Remove the shoted part and measure the DC voltage (V3) at pin ⑦ of IC306 (TP309).
v) Reshort TP317 with TP313 and measure the DC voltage (V4) at pin ⑦ of IC306 (TP309).
vi) Adjust with RV315 to obtain $|V3 - V4| \leqq 3mV$.
vii) Remove the shorted part after making the adjustment.

5-3-2. Reel Servo System Alignment

1) FF/REW Speed Adjustment (SS-29 Board)
Mode: FF
Frequency counter: TP002

[Adjustment method]

i) Adjust with RV001 so that 380Hz ±30Hz is obtained near the center of the tape L-125.
ii) Connect a frequency counter to TP001, REWIND the tape, then check that the frequency is 380Hz ±50Hz near the center of the tape center.

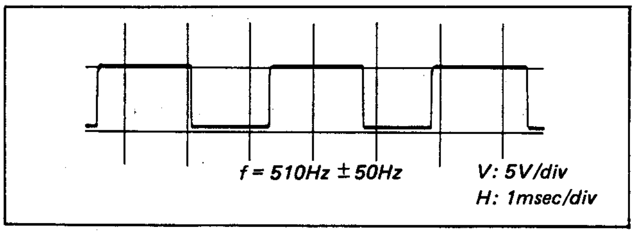


Fig. 5-11. FF/REW speed adjustment

2) HIGH SPEED FF/REW Adjustment (SS-29 Board)
Mode: HIGH SPEED FF
Frequency counter: TP002

[Adjustment method]

i) Adjust with RV003 so that the frequency becomes 510Hz ±30Hz near the center of the tape L-125.
ii) Connect a frequency counter to TP001, run the tape in the HIGH SPEED REW mode, then check that the frequency is 510Hz ±50Hz near the tape center.

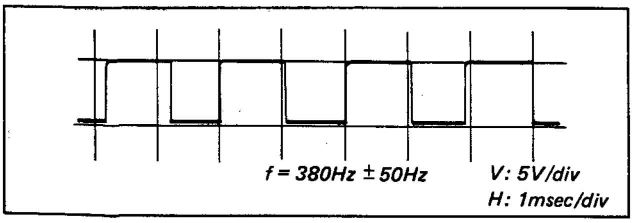
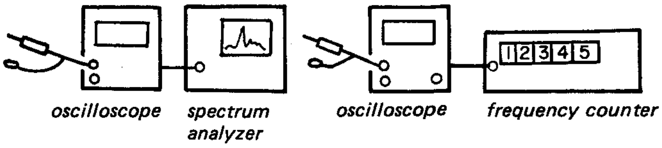


Fig. 5-12. High speed FF/REW adjustment

5-4. PAL VIDEO SYSTEM ALIGNMENT

The alignment sequence is shown below. The Y signal and chroma signal systems are aligned for both playback and recording systems.
Colour video signal supplied by the PAL colour bar generator is used as video input signal for video system alignment in the record mode. Check that the sync and colour burst signals conform to the specifications designated in "Set-up for Alignment" in Fig. 5-1.

Caution to be exercised on all items throughout:
Spectrum analyzer and frequency counter are connected through an oscilloscope.



5-4-1. Record System Alignment

1) Sync and peak AGC adjustment
2) Compress adjustment
3) Deviation adjustment
4) Carrier set adjustment
5) 1/2 f_H shift adjustment
6) Dark clip adjustment
7) White clip adjustment
8) Y Record current adjustment
9) 4.43MHz REF adjustment
10) Burst flag adjustment
11) ACC adjustment
12) AFC adjustment
13) AFC offset adjustment
14) Carrier blance adjustment
15) Pilot burst signal level adjustment
16) Chroma record current adjustment
17) Video record current control

5-4-2. Playback System Alignment

1) Playback frequency characteristic adjustment
2) Expand adjustment
3) Playback video level adjustment
4) Y-comb adjustment
5) Chroma comb filter adjustment
6) JOG PLL adjustment
7) CF. T adjustment
8) JOG exchange chroma level adjustment
9) Shift adjustment

5-4-1. Record System Alignment

Note: Adjust to "9) 4.43MHz REF Adjustment" by presetting RV009 clockwise full.
Make sure to perform 10) Burst Flag Adjustment after making each adjustment

1) Sync and Peak AGC Adjustment (RV-7P Board)
Mode: E-E
Signal: GRAY SCALE
Oscilloscope: VIDEO OUT (75Ω terminated)

[Adjustment method]

i) Rotate RV004 from the component side fully counterclockwise.
ii) Adjust to 1Vp-p ±0.05Vp-p with RV002.
iii) Turn RV004 from the component side clockwise and set it so that the output level just starts to lower.

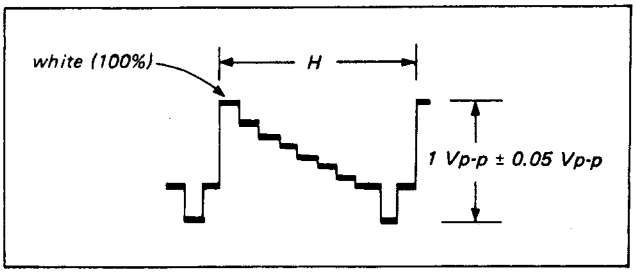


Fig. 5-13. Sync and peak AGC adjustment

2) Compress Adjustment (RV-7P Board)
Mode: E-E
Signal: None
Digital voltmeter: See Fig. 5-14.

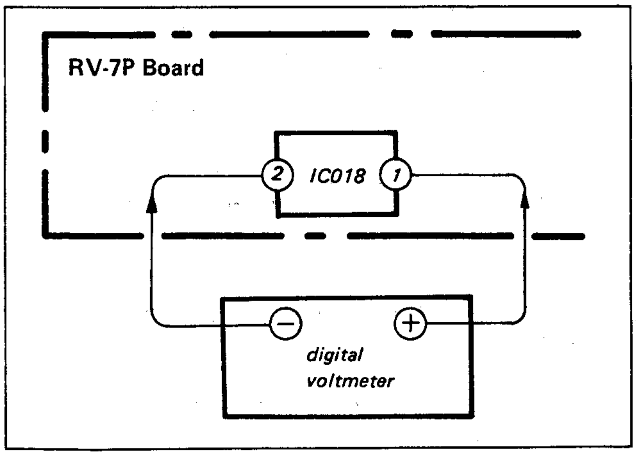


Fig. 5-14.

[Adjustment method]

i) Rotate RV023 clockwise full and rotate RV022 counterclockwise full seen from the pattern side.
ii) Adjust to 0.30 ±0.01V dc using RV025.

Note: Make this adjustment more than 30sec after turning on the power switch.
Make sure to adjust 6) DARK CLIP adjustment and 7) WHITE CLIP adjustment.

3) Deviation Adjustment (RV-7P Board)
Mode: E-E
Signal: Colour bar
Spectrum analyzer: TP001

[Adjustment method]

i) Connect pin ① of CN004 and ground with a jumper wire.
ii) Adjust the spacing between f_2 and f_1 to 1.36MHz ±0.04MHz with RV003. (See Fig. 5-15.)
iii) Remove the jumper wire after making the adjustment.

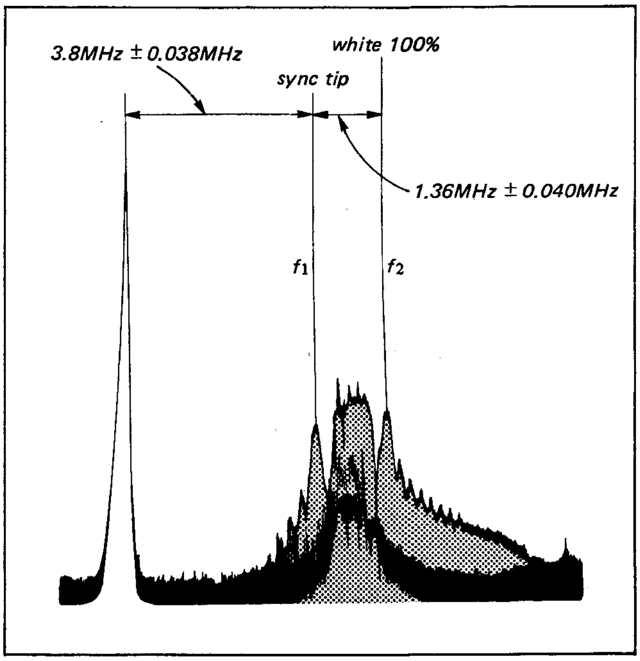


Fig. 5-15. Deviation & carrier set adjustment

4) Carrier Set Adjustment (RV-7P Board)
Mode: E-E
Signal: Colour bar
Spectrum analyzer: TP001

[Adjustment method]

i) Connect pin ① of CN004 and ground with a jumper wire.
ii) Adjust the f_1 with RV024 to 3.8MHz ±0.038MHz. (See Fig. 5-15.)
iii) Remove the jumper wire after making the adjustment.

5) 1/2 f_H Shift Adjustment (RV-7P Board)
Mode: Record
Signal: None
Spectrum analyzer: TP001

[Adjustment method]
Adjust RV021 so that the fluctuation of frequency is 7.8kHz ±0.5kHz. (See Fig. 5-16.)

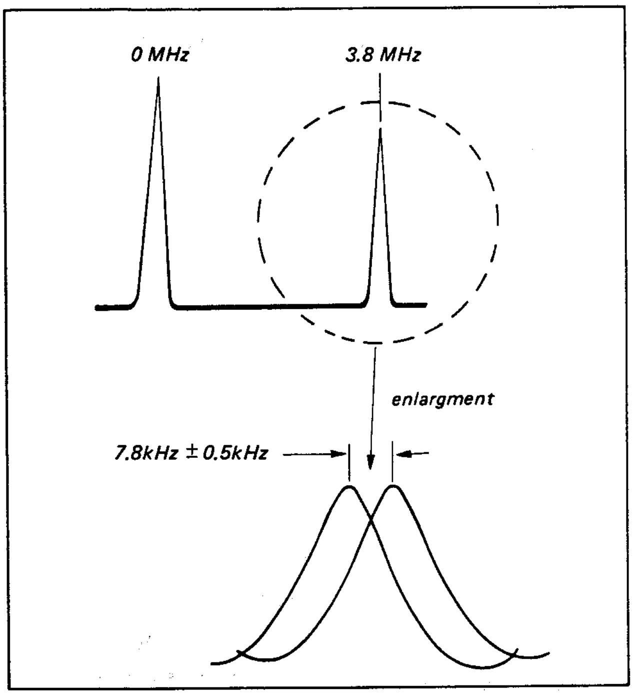


Fig. 5-16. 1/2 f_H shift adjustment

6) Dark Clip Adjustment (RV-7P Board)
Mode: E-E
Signal: GRAY SCALE
Digital voltmeter: Pin ⑥ of IC018

[Adjustment method]
Adjust to 1.93V ±0.05V dc with RV022.

7) White Clip Adjustment (RV-7P Board)
Mode: E-E
Signal: GRAY SCALE
Oscilloscope: Pin ⑨ of IC018

[Adjustment method]
Adjust with RV023 so that 100% of white overshoot becomes 220% ±10%. (See Fig. 5-17.)

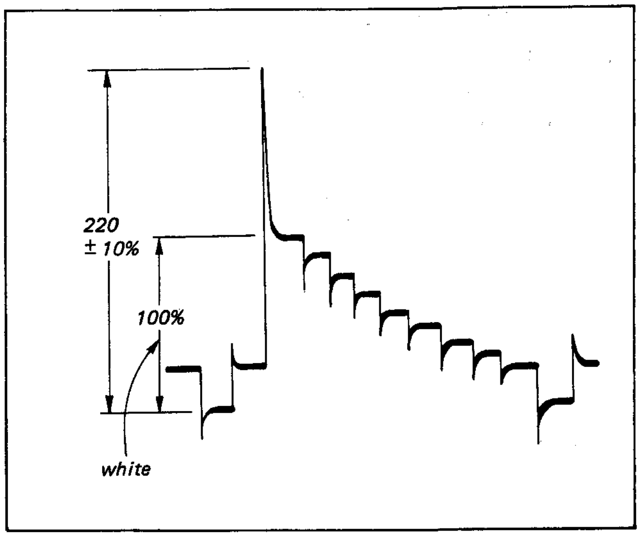


Fig. 5-17.

8) Y Record Current Adjustment (RP-18 Board)
Mode: Record
Signal: None
Oscilloscope: Pin ① of CN301
GND: Video block shield case

[Adjustment method]
Adjust to 3.25Vp-p ±0.01Vp-p with RV301. (See Fig. 5-18.)

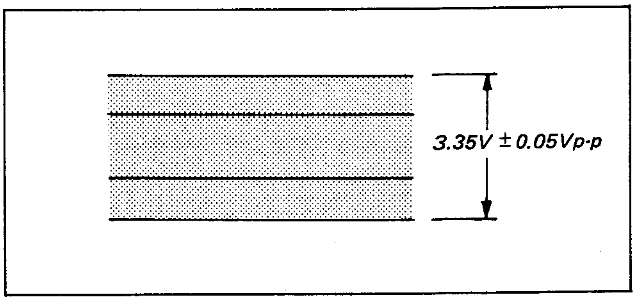


Fig. 5-18. Y record current adjustment

9) 4.43MHz REF Adjustment (RV-7P Board)
Mode: E-E
Signal: colour bar
Frequency counter: Pin ③ of CN004

[Adjustment method]
Adjust to 4.433619MHz ±5Hz with CV001.

10) Burst Flag Adjustment (RV-7P Board)
Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ⑩ of IC007

[Adjustment method]

Adjust RV009 so that the pulse width becomes 2.2μsec ±0.1μsec. (See Fig. 5-19.)

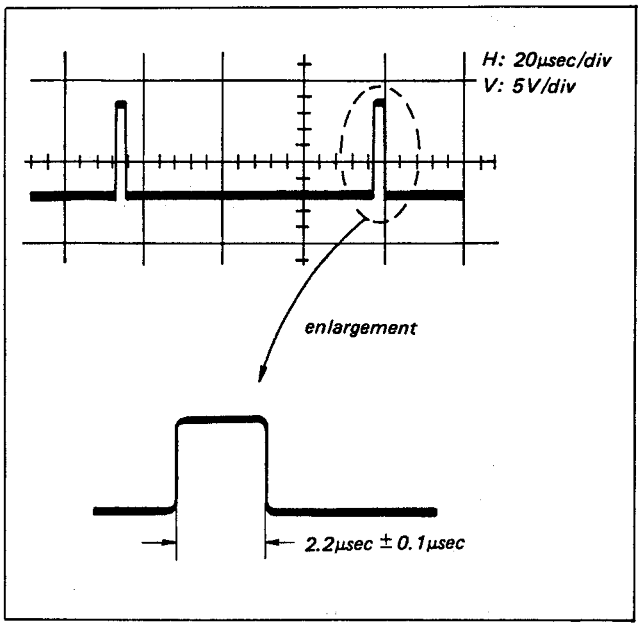

H: 20μsec/div
V: 5V/div
enlargement
2.2μsec ± 0.1μsec

Fig. 5-19. Burst flag adjustment

11) ACC Adjustment (RV-7P Board)
Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ㉔ of IC008

[Adjustment method]

Adjust RV010 for 0.68V ±0.05Vp-p. (See Fig. 5-20.)

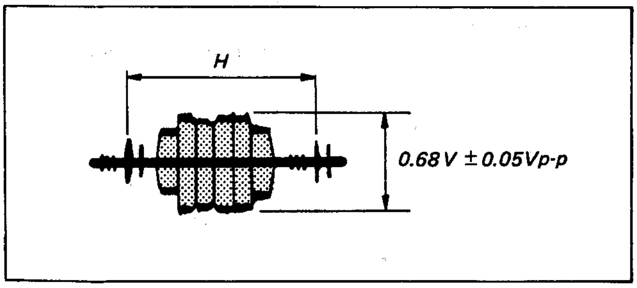

H
0.68V ±0.05Vp-p

Fig. 5-20. ACC adjustment

12) AFC Adjustment (RV-7P Board)
Mode: E-E
Signal: None
Frequency counter: Pin ⑫ of IC012

[Adjustment method]

Adjust to 4.82MHz ±0.05MHz with RV014. (See Fig. 5-21.)

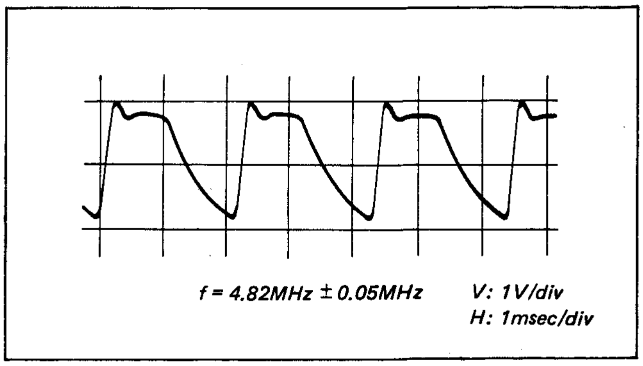

f = 4.82MHz ± 0.05MHz
V: 1V/div
H: 1msec/div

Fig. 5-21. AFC adjustment

13) AFC Offset Adjustment (RV-7P Board)
Mode: Record
Signal: Colour bar
Oscilloscope: Pin ㊱ of IC012

[Adjustment method]

Adjust RV015 so that the fluctuation of DC level is minimum. (See Fig. 5-22.)

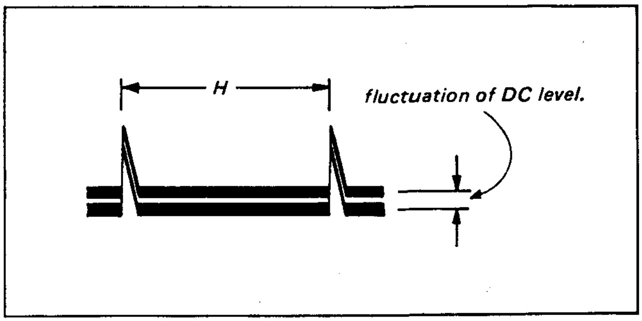

H
fluctuation of DC level.

Fig. 5-22. AFC offset adjustment

14) Carrier Balance Adjustment (RV-7P Board)
Mode: E-E
Signal: Colour bar
Spectrum analyzer: Pin ⑧ of IC012

[Adjustment method]

Adjust RV013 for minimum level of carrier lead section (5.12MHz). (See Fig. 5-23.)

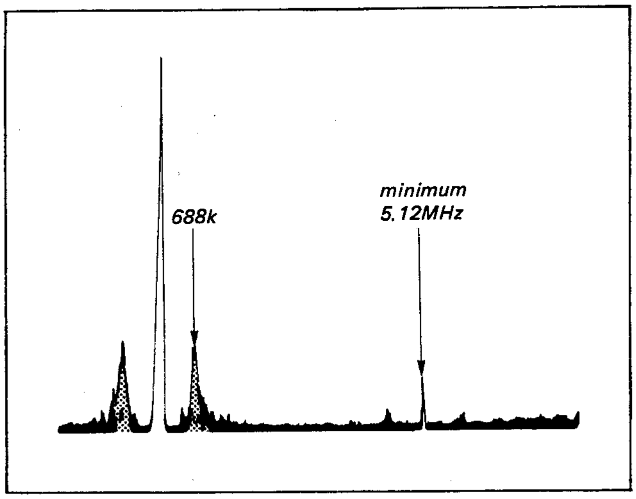


Fig. 5-23. Carrier balance adjustment

15) Pilot Burst Signal Level Adjustment (RV-7P Board)
Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ⑧ of IC009

[Adjustment method]

Adjust RV011 so that the level of the chroma signal becomes equal to the one of the burst signal. (See Fig. 5-24.)

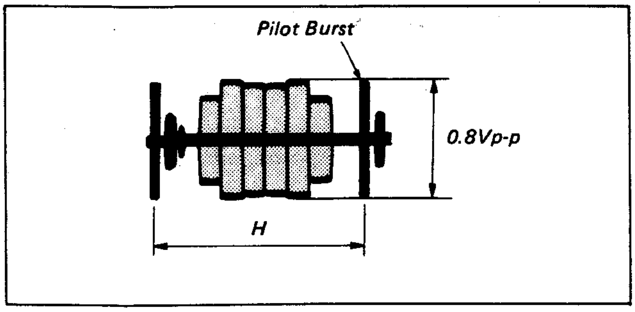


Fig. 5-24. Pilot burst adjustment

16) Chroma Record Current Adjustment (RP-18 Board)
Mode: Record

[Adjustment method]

i) Connect an oscilloscope to TP304 in a no-signal input state and preset RV301 so that the output level disappears.
ii) Input a colour bar, connect an oscilloscope to TP305, then adjust RV305 so that the output becomes 330mVp-p ±10mVp-p.

Note: Make sure to perform 8) Y Record Current Adjustment after making the adjustment.

17) Video Record Current Control (RP-18 Board)
Signal: Colour bar
Oscilloscope: Front panel: check terminal, Beta hi-fi RF signal
External trigger: Front panel: check terminal, switching pulse

[Adjustment method]

i) Short between AUDIO IN and ground and record colour bar signal. (Audio is non-input).
ii) Playback the recorded portion.
iii) Measure with oscilloscope the AFM (Beta hi-fi) PB RF waveform at check terminal of front panel. Measure V at the middle point of the channel which has a lower RF waveform level. (See Fig. 5-25.)

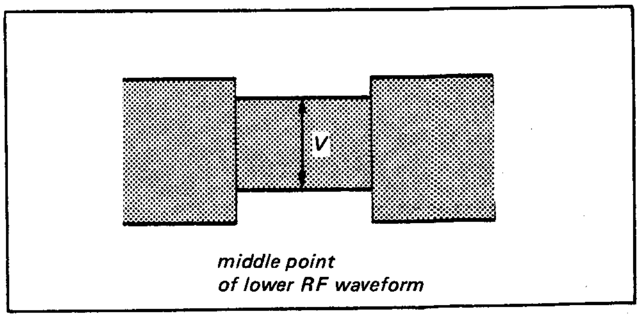


Fig. 5-25. AMF (Beta hi-fi) PB RF waveform

iv) IF V ≤ 110mVp-p, turn S401 1 step clockwise.
v) When the S401 is turned 1 step, self-record and self-playback the colour bar again and make sure they are higher than V ≥ 110mVp-p.

Note: Video record current control should be made by using the same tape as the one used for actual recording.

5-4-2. Playback System Alignment

1) Playback Frequency Characteristic Adjustment (RP-18 Board)
   - Adjust both the A and B channels.
   - The B channel indicated by ( ).
     Mode: Playback
     Signal: Alignment tape (KR4-1C)
     Oscilloscope: Pin ⑤ of CN302 (TP301)
     External trigger: Pin ④ of CN302 (TP302)

[Adjustment method]

i) Rotate the tracking knob to make 2MHz to be maximum.
ii) Adjust RV302 so that the 2MHz level of ACH and BCH are the same.
iii) Set the trigger slope to – (+).
iv) Adjust the 5.2MHz amplitude to 55 – 56% of the 2MHz amplitude with RV303 (RV304).

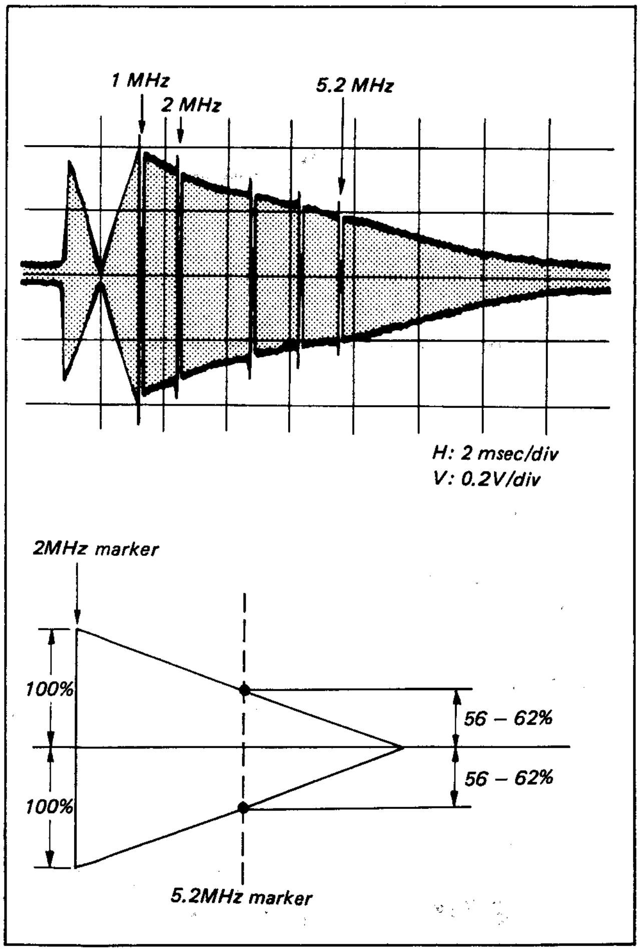


Fig. 5-26. Playback amplifier frequency characteristic adjustment

2) Expand Adjustment (RV-7P Board)
   Mode: Playback
   Signal: Colour bar
   Digital voltmeter: See Fig. 5-27.

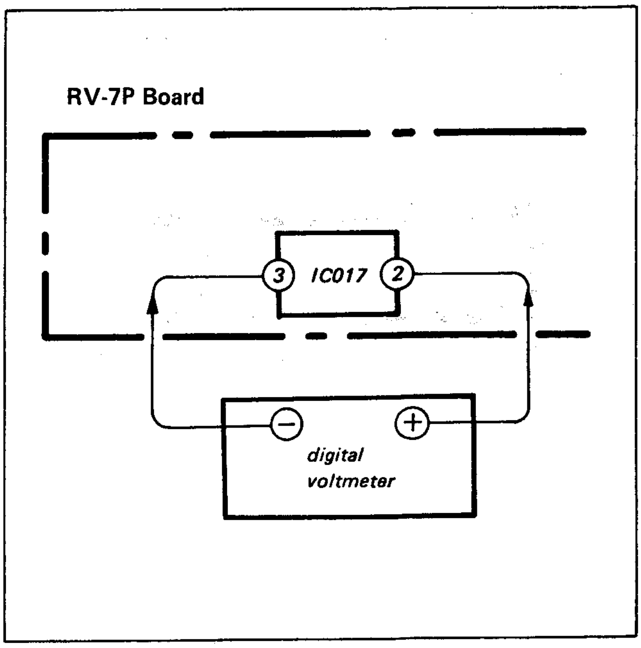


Fig. 5-27. Expand adjustment

[Adjustment method]

Adjust to 0.40 ±0.01V dc using RV019.

Note: Adjust more than 30sec after turning on the power switch.

3) Playback Video Level Adjustment (RV-7P Board)
   Mode: Playback
   Signal: Alignment tape (KR5-2C) colour bar
   Oscilloscope: VIDEO OUT (75Ω terminated)

[Adjustment method]

Adjust to 1.0V ±0.05Vp-p with RV020.

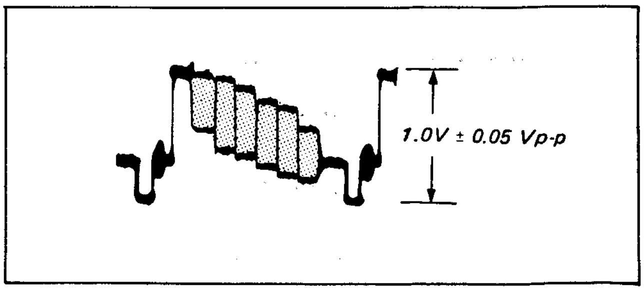


Fig. 5-28. Playback video level adjustment

4) Y-Comb Adjustment (RV-7P Board)
Mode: Playback
Signal: Colour bar
Oscilloscope: Pin ⑧ of IC002

[Adjustment method]
Adjust RV001 so that the level of A and B are equal. (See Fig. 5-29.)

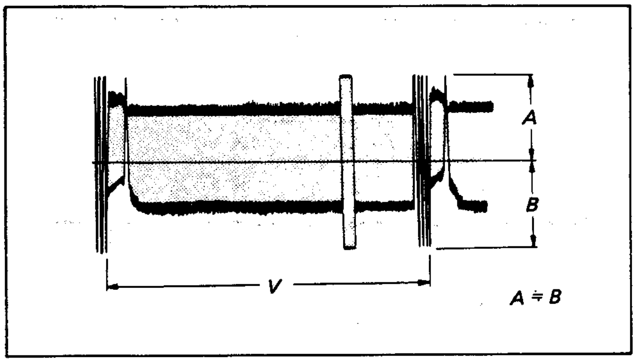


Fig. 5-29. Y-comb adjustment

5) Chroma Comb Filter Adjustment (RV-7P Board)
Mode: Playback
Signal: Alignment tape (KR5-2C) colour bar
Adjust while observing the monitor TV screen.

[Adjustment method]
Minimize beats with RV012 and LV001.

Caution: Make sure to perform 13) Carrier Balance Adjustment after making the adjustment.

6) JOG PLL Adjustment (RV-7P Board)
Mode: E-E
Signal: Colour bar
Oscilloscope: Pin ㉘ of IC006

[Adjustment method]
Adjust RV007 for 3.88V ±0.05V dc. (See Fig. 5-30.)

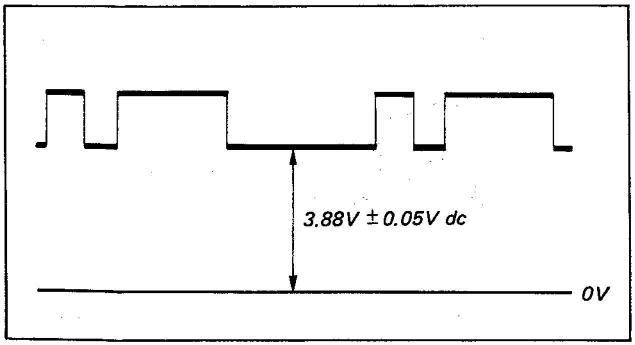


Fig. 5-30. JOG PLL adjustment

7) CF. T Adjustment (RV-7P Board)
Mode: Playback
Signal: Colour bar
Oscilloscope: CH-1 ... Pin ⑬ of IC006
CH-2 ... Pin ⑯ of IC006

[Adjustment method]
Adjust as follows with RV008. (See Fig. 5-31.)

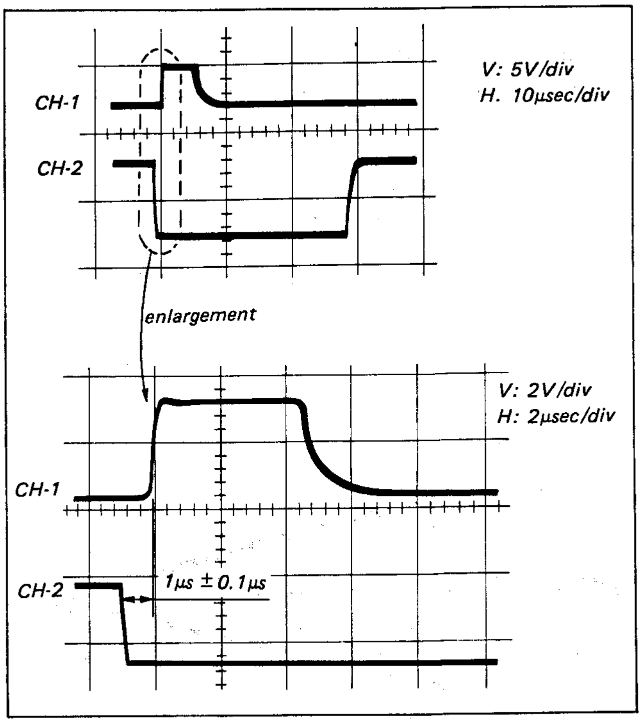


Fig. 5-31. CF. T adjustment

8) JOG Exchange Chroma Level Adjustment (RV-7P Board)
Mode: PB · PAUSE (STILL)
Signal: Colour bar
Oscilloscope: Pin ㉕ of IC004

[Adjustment method]
Adjust RV005 so that the fluctuation of level is minimum. (See Fig. 5-32.)

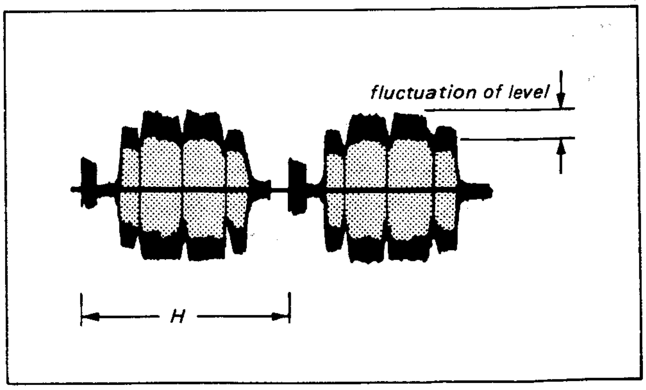


Fig. 5-32. JOG EXCH. C. level adjustment

9) SHIFT Adjustment (RV-7P Board)
Mode: Playback
Signal: Alignment tape colour bar (KR5-2C)
Oscilloscope: Pin ⑫ of IC005
External trigger: Pin ⑫ of IC003

[Adjustment method]

i) Connect pin ㉖ of IC005 and ground with a jumper wire.
ii) Adjust as follows with RV006. (See Fig. 5-33.)
iii) Remove the jumper wire after making the adjustment.

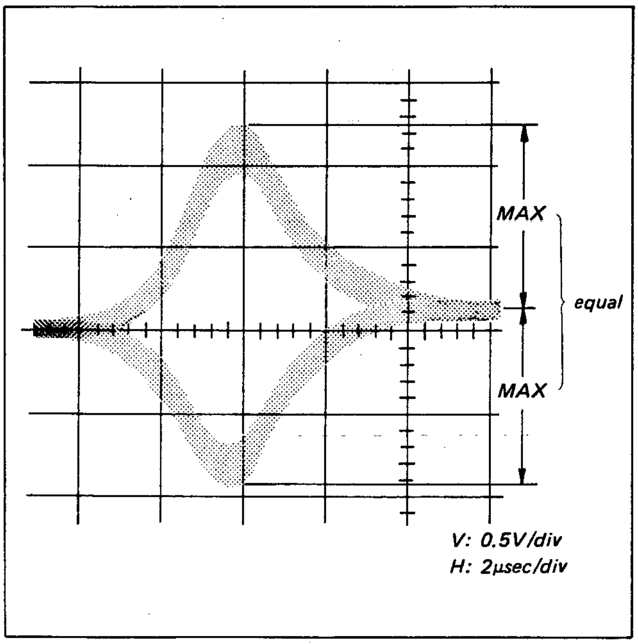


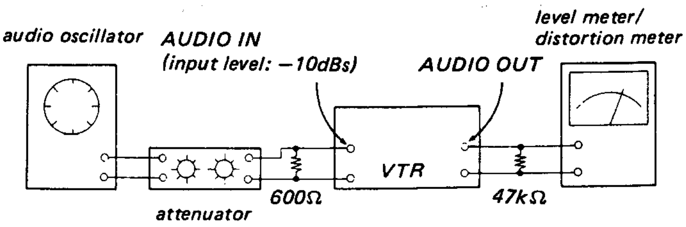
Fig. 5-33. SHIFT adjustment

5-5. AUDIO SYSTEM ADJUSTMENT (AM-6 Board, RP-18 Board)

Use a Dynamicron tape for adjustments.

Note: Set the MONITOR switch to NORMAL.
Set the LIMITER switch to OFF.
Set the BNR switch to OFF.
Part names enclosed with parentheses are adjustment of CH-2 (R).
Set the NORMAL REC LEVEL VOLUME CONTROL so that TP101 (TP201) on AM-6 board becomes −30dBs when a signal of 333Hz, −10dBs is input from the AUDIO IN.

[Connection of Related Equipment]



[Adjustment method]

1) ACE head adjustment . . . See "Mechanical Adjustment"
2) E-E level adjustment
3) Line output level adjustment
4) LIMITER balance adjustment
5) Playback level adjustment
6) Playback frequency characteristic check
7) BNR adjustment
8) BNR characteristic check
9) Bias oscillator adjustment
10) Bias trap adjustment
11) Record bias adjustment
12) Record level adjustment
13) Overall frequency characteristic check
14) Overall S/N check
15) Overall distortion check

1) ACE Head Adjustment

Refer to "Mechanical Adjustment"

2) E-E Level Adjustment (AM-6 Board)

i) Supply a 333Hz signal at −10dBs to the AUDIO IN and check that level of TP101 (TP201) is −30.0dBs ±0.1dB.
ii) Adjust the level of TP102 (TP202) to −5.0dBs ±0.1dB with RV104 (RV204).

3) Line Output Level Adjustment (RP-18 Board)

i) Supply a 333Hz signal at −10dBs to the AUDIO IN.
ii) Adjust the level of AUDIO OUT to −10dBs ±0.1dB with RV701 (RV702) after making the 2) E-E Level Adjustment.

4) LIMITER Balance Adjustment (AM-6 Board)

i) Turn on the LIMITER switch.
ii) Input a signal to the AUDIO IN so that TP101 (TP201) becomes −20dBs at 333Hz.
iii) Adjust with RV001 so that the level difference between TP102 (LCH) and TP202 (RCH) becomes less than 0.2dB.

5) Playback Level Adjustment (AM-6 Board)

i) Turn off the BNR switch.
ii) Playback the 333Hz of alignment tape (KR3-1C).
iii) Adjust with RV105 (RV205) so that the level becomes −5.0dBs ±0.2dB at TP102 (TP202).

6) Playback Frequency Characteristic Check (AM-6 Board)

i) Turn off the BNR switch.
ii) Play back 333Hz and 7kHz from the alignment tape (KR3-4F) and check the AUDIO OUT level at 7kHz relative to the one at 333Hz.

7) BNR Adjustment (AM-6 Board)

i) Ground TP109 (TP209) with a jumper wire.
ii) Supply a 10kHz signal at −5dBs to TP103 (TP203). (See Fig. 5-34.)
iii) Turn on the BNR switch and set up the PLAYBACK mode.
iv) Connect VTVM to TP110 (TP210).
v) Adjust to −5dBs with RV102 (RV202).
vi) Change the signal 1kHz, −5dBs.
vii) Adjust to −5dBs with RV101 (RV201).
viii) Repeat (ii) through (vii), and ensure that −5.0dBs ±0.1dB is obtained for both 1kHz and 10kHz signals.
ix) Remove the jumper wire after making the adjustment.

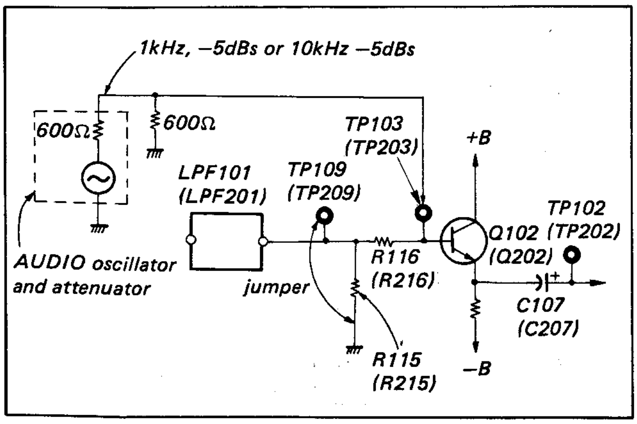


Fig. 5-34. BNR adjustment

8) BNR Characteristic Check (AM-6 Board)

i) Ground TP109 (TP209) with a jumper wire. (See Fig. 5-34.)
ii) Supply a 1kHz signal at −35dBs to TP103 (TP203).
iii) Turn on the BNR switch and set up the PLAYBACK mode.
iv) Connect VTVM to TP110 (TP210).
v) Ensure that the VTVM level is −50dBs ±2dB.
vi) Change the signal to 10kHz, −35dBs.
vii) Set up the E-E mode.
viii) Connect VTVM to TP111 (TP211).
ix) Ensure that the VTVM level is −24dBs ±2dB.
x) Change the signal to 1kHz, −35dBs.
xi) Ensure that the VTVM level is −22dBs ±2dB.

9) Bias Oscillator Adjustment (AM-6 Board)

i) Set the input signal level to zero and set up the RECORD mode.
ii) Connect a frequency counter to TP006.
iii) Adjust to 65kHz ±0.5kHz with T001. (See Fig. 5-35.)

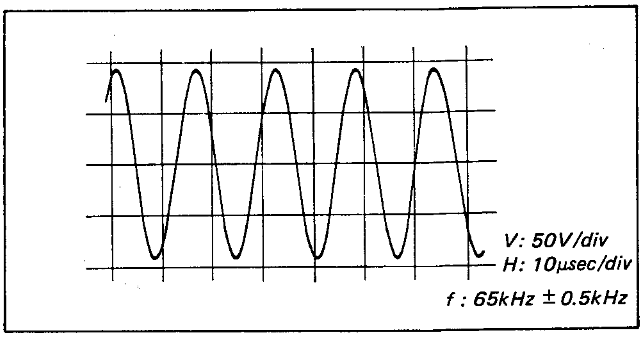


Fig. 5-35. Bias oscillator adjustment

10) Bias Trap Adjustment (AM-6 Board)

i) Set the input signal level to zero and set up the RECORD mode.
ii) Connect an oscilloscope to TP107 (TP207).
iii) Minimize bias leak with T101 (T201).
Value: minimum level below 1.5Vp-p. (See Fig. 5-36.)

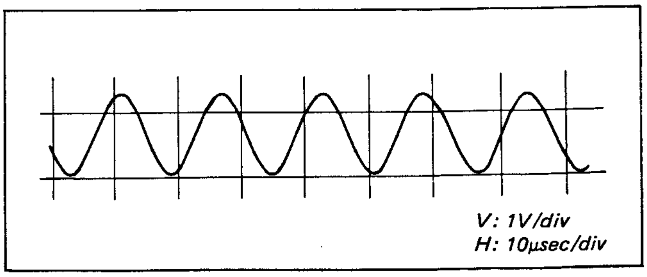


Fig. 5-36. Bias trap adjustment

11) Record Bias Adjustment (AM-6 Board)

i) Turn off the BNR switch.
ii) Supply a 333Hz signal at −30dBs to AUDIO IN.
iii) Record signal.
iv) Change the signal to 7kHz, −30dBs.
v) Record signal.
vi) Playback the recorded section of the tape and check that the deviation of 7kHz level relative to 333Hz is the deviation of 7kHz level obtained on step "7) Playback Frequency Characteristics Check" +1.0dB ±0.5dB. If the level is outside this range, repeat steps ii) to v) adjusting with CV101 (CV201) until the standard is met.

12) Record Level Adjustment (AM-6 Board)

i) Turn off the BNR switch.
ii) Supply a 333Hz signal at −10dBs to AUDIO IN.
iii) Record signal.
iv) Play back the recorded section of the tape and check that TP102 (TP202) level is −5.0dB ±0.2dB. If the level is outside this range, repeat Steps ii) through iii) above adjusting with RV106 (RV206) until the standard value is obtained.

13) Overall Frequency Characteristics Check (AM-6 Board)

i) Turn off the BNR switch.
ii) Supply a 333Hz signal at −30dBs to AUDIO IN.
iii) Record signals.
iv) Change the frequency to 50Hz, 100Hz, 7kHz and 10kHz and repeat Steps ii) and iii).
v) Play back the recorded section of the tape and verify that the level is within the specification. (See Fig. 5-37.)

Standard values: With reference to the 333Hz
play back output level

50Hz $^{+1.0}_{-10}$ dB

100Hz $^{+1.0}_{-5.0}$ dB

7kHz $^{+1.0}_{-3.5}$ dB

10kHz $^{+1.0}_{-10}$ dB

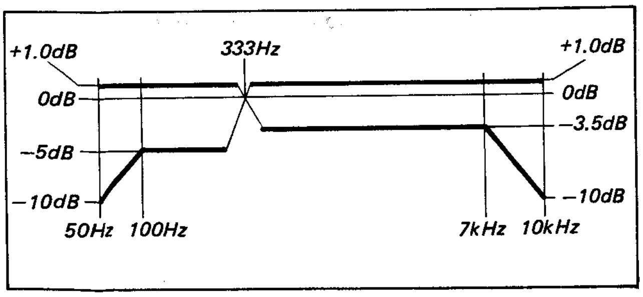


Fig. 5-37. Overall frequency characteristic

14) Overall Distortion Check (AM-6 Board)

i) Turn OFF the BNR switch.
ii) Add 333Hz, −10dBs to the AUDIO IN.
iii) Record signal.
iv) Playback the recorded portion and check that the distortion factor at the AUDIO OUT is less than 4%.
v) Turn ON the BNR switch, perform Steps ii) through iv) and check that the distortion factor at the AUDIO OUT is less than 4%.

15) Overall S/N Check (AM-6 Board)

i) Turn OFF the BNR switch.
ii) Add 333Hz, −10dBs to the AUDIO IN.
iii) Record signal.
iv) Record in a no-signal state.
v) Playback the recorded portion and check that the difference between the signal and no-signal levels is greater than 32dB at the AUDIO OUT.
vi) Turn ON the BNR switch, perform Steps ii) through v), then check that the level difference at the AUDIO OUT is greater than 45dB.

5-6. Beta hi-fi AUDIO System Adjustment (AF-3P Board)

Note: Set the MONITOR switch to hi-fi.
Set the BNR switch to OFF.
Set the LIMITER switch to OFF.
Part names enclosed with parentheses are adjustment of CH-2(R).
Set the Betahifi REC LEVEL VOLUME CONTROL so that pin ⑤ (pin ⑦) of CN004 on AF-3P board becomes −30dBs when a signal of 400Hz, −10dBs is input from the AUDIO IN.

[Adjustment method]

1) E-E input level adjustment
2) AF output level adjustment
3) Dynamic emphasis adjustment
4) AFM carrier frequency adjustment
5) AFM record current adjustment
6) RF input level adjustment
7) Playback level adjustment
8) Playback Ach and Bch level balance adjustment
9) AF RF output level adjustment
10) AFM deviation adjustment
11) Overall frequency characteristic check
12) Overall distortion check
13) Overall S/N check
14) Level meter adjustment

1) E-E Input Level Adjustment (AF-3P Board)

i) Input a signal of 400Hz, −10dBs from the AUDIO IN.
ii) Adjust with RV022 (RV023) so that TP006 (TP007) becomes −26.5dBs ±0.05dB.

2) AF Output Level Adjustment (RP-18 Board)

Note: Make sure to check that 1) E-E INPUT LEVEL Adjustment has been completed.

i) Input a signal of 400Hz, −10dBs from the AUDIO IN.
ii) Adjust with RV704 (RV703) so that the level becomes −10dBs ±0.05dB at TP707 (TP708).

3) Dynamic Emphasis Adjustment (AF-3P Board)

i) Input at 400Hz and −10dBs signal to the AUDIO IN and set up a RECORD state.
ii) Connect VTVM to the + side of C91 and adjust the level to −20.0 ±0.1dB using RV019.

4) AFM Carrier Frequency Adjustment (AF-3P Board)

i) Connect a frequency counter to TP005 [Pin ⑪ of IC010] (TP012 [Pin ⑪ of IC011]) in a no-signal state (shorted between the AUDIO IN and GND) to set up a RECORD state.
ii) Adjust to 1.44MHz ±1kHz (2.1MHz ±1kHz) using RV016 (RV014).
iii) Restore the shorting between the AUDIO IN and GND after completing the adjustment.

5) AFM Record Current Adjustment (AF-3P Board, RP-18 Board)

i) Short between the AUDIO IN and GND to set up a no-signal state.
ii) Connect an oscilloscope to Pin ⑤ of CN503 on RP-18 Board.
iii) Adjust RV017 so that the f_1 level is 55 ±2mVp-p. (See Fig. 5-38.)
iv) Adjust RV015 so that the f_2 level is 200 ±5mVp-p. (See Fig. 5-38.)
v) Restore the shorting between the AUDIO IN and GND after completing the adjustment.

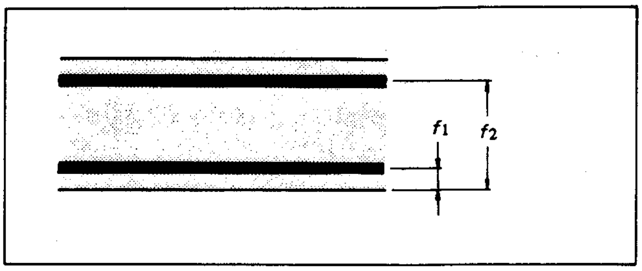


Fig. 5-38. AFM record current adjustment

6) RF Input Level Adjustment (AF-3P Board, RP-18 Board)

Note: Make this adjustment after checking that the AFM record current has been adjusted.
Tracking control knob: center click position.

i) Short and record between the AUDIO IN and GND and play back the recorded part.
ii) Connect an oscilloscope to TP003 and adjust to 70mVp-p ±3mVp-p using RV501 on RP-18 Board.
iii) Connect an oscilloscope to TP004 and adjust to 70mVp-p ±3mVp-p using RV502 on RP-18 Board.

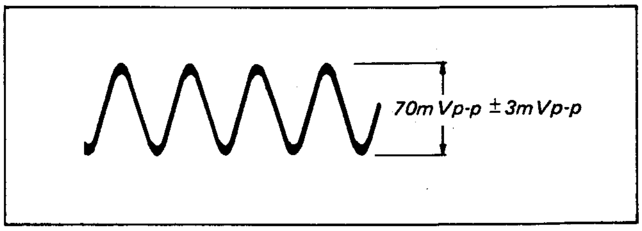


Fig. 5-39. RF input level adjustment

7) Playback Level Adjustment (AF-3P Board)

i) Play back the BETA hi-fi alignment tape (KR5-10C).

ii) Connect VTVM to TP006 [Pin ㊵ of IC012] (TP007 [Pin ③ of IC012]) and adjust RV005 (RV010) to obtain −20dB ±0.1dB.

8) Playback Ach and Bch Level Balance Adjustment (AF-3P Board)

i) Play back the Beta hi-fi alignment tape (KR5-10C).

ii) Connect an oscilloscope to TP006 [Pin ㊵ of IC012] (TP007 [Pin ③ of IC012]) and adjust RV006 (RV-012) to eliminate the level difference between Ach and Bch.

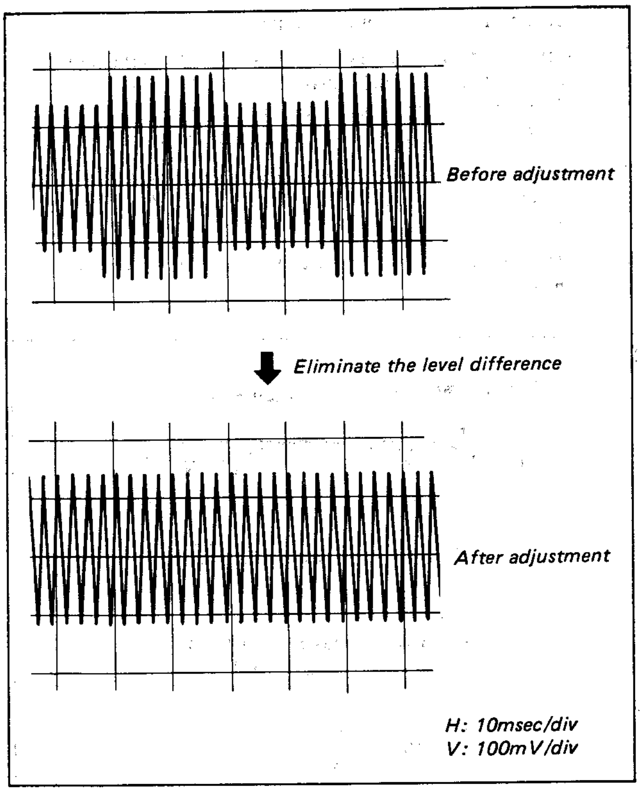


Fig. 5-40. Playback level balance adjustment

9) RF OUTPUT Level Adjustment (RP-18 Board)

i) Short between AUDIO IN and ground and record in a no-signal input state.

ii) Playback the recorded portion.

iii) Connect CH-1 of the oscilloscope to the check terminal of Betahi-fi (RF) on the front panel and CH-2 to TP302.

iv) Adjust the center level of smaller wave either ACH or BCH to 150mVp-p with RV503. (See Fig. 5-41.)

v) Disconnect the shorted part after making the adjustment.

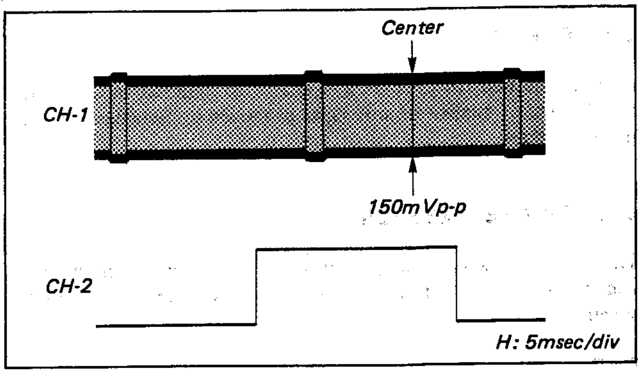


Fig. 5-41. RF level adjustment

10) AFM Deviation Adjustment (AF-3P Board)

i) Input and record a 400Hz and −10dBs signal to the audio line input and play back the recorded part.

ii) Adjust RV018 (RV013) so that the output when played back will be the same as that of the AUDIO OUT in the E-E mode.

11) Overall Frequency Characteristic Check

i) Feed a 400Hz signal to the AUDIO IN. Set up the E-E mode and adjust the attenuator so that the AUDIO OUT level becomes −10dBs.

ii) Record signal.

iii) Change the frequency to 20, 100, and 400Hz, as well as to 10kHz and 20kHz, then repeat Steps i) and ii).

iv) Play back the recorded part and check that the output levels are inside the standard. (See Fig. 5-42.)

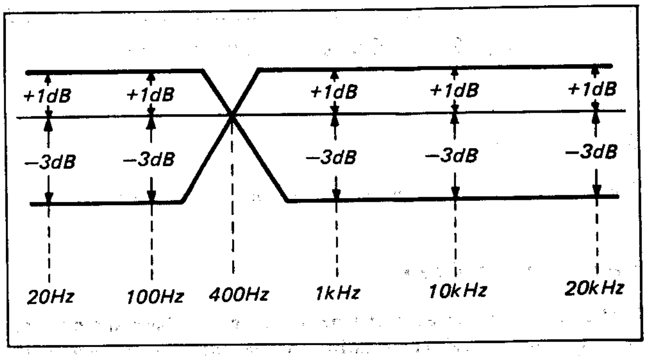


Fig. 5-42. Overall frequency characteristic check

12) Overall Distortion Check

i) Supply a 400Hz signal at −10dBs.

ii) Record signal.

iii) Play back the recorded part of the tape and verify that the distortion is below 0.5%.

13) Overall S/N Check

i) Supply a 400Hz signal at −10dBs.

ii) Record signal.

iii) Set the input signal level to zero and record signals.

iv) Playback the recorded section of the tape and check that the output level difference is greater than 70dB.

14) Level Meter Adjustment

Adjust RV103 (RV203) on AM-6 board so that the level meter points at 0dB, and the tolerance is within the size of a single needle in "1) E-E Input Level Adjustment" mode.

SECTION 6
INSTRUCTIONS FOR CHECKING PRINTER SYSTEM

6-1. PURPOSE

A check method for printers is regulated to maintain in the market a high level of quality of soft tapes produced by Betamax soft tape manufacturers.

6-2. PRINTER SYSTEM

The printer, standard player, product tester operating method, and management maintenance system for them are called a printer system.

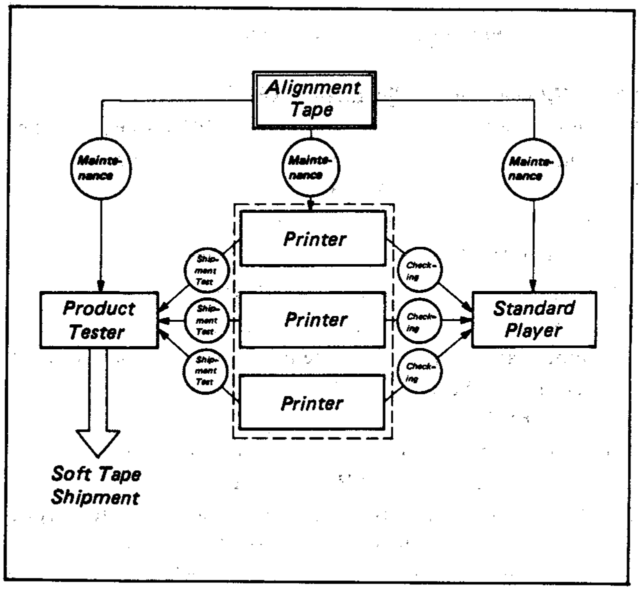

Alignment Tape
Mainte-nance
Mainte-nance
Mainte-nance
Printer
Printer
Printer
Ship-ment Test
Ship-ment Test
Ship-ment Test
Check-ing
Check-ing
Check-ing
Product Tester
Standard Player
Soft Tape Shipment

Fig. 6-1. *Concept of Printer System*

6-2-1. Printer

A set to produce soft tapes and satisfies printer check items.

6-2-2. Standard Player

Used to check produced soft tapes on a sampling basis and must be managed and maintained to satisfy the standard player check items at all times.

6-2-3. Product Tester

Used to inspect produced soft tapes before their shipment and must satisfy the product tester check items.

6-3. SLO-1700 CHECK ITEMS

Check the following items every 500 hours using an alignment tape. Adjust in accordance with the SLO-1700 Adjust Guide if the standard is not met.

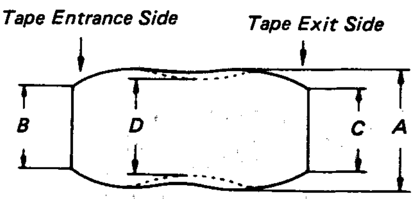
[Check Items]

1 Tracking
2 CTL head
3 Picture quality
4 Sound quality

6-3-1. Tracking Confirmation

[Check method]

1) Adjust the tracking control center.
2) Connect an oscilloscope to the RF output terminal (at the SLO-1700 front panel). Playback the 1MHz portion of the alignment tape by triggering using the SW PULSE terminal for RF checking (at the SLO-1700 front panel).
3) Rotate the tracking control knob counterclockwise, then reduce the RF output waveform to 2/3 of the maximum level.
4) Observe the waveform and check that the waveform satisfy the standard.


Tape Entrance Side
Tape Exit Side
B
D
C
A

Standard: At maximum level of tracking control knob

Contact: $\frac{B}{A} \geqq 0.7$

$\frac{C}{A} \geqq 0.7$

Variation: $\frac{D}{A} \geqq 0.8$

Fig. 6-2

6-3-2. CTL Head Position Confirmation

[Check method]

1) Adjust the tracking control center.
2) Rotate the tracking control knob and check that the RF output at the center click is more than 95% of the maximum value of the RF output.

Standard:

$$\frac{\text{RF output at center click}}{\text{Maximum value of RF output}} \geqq 0.95$$

6-3-3. Picture Quality Confirmation

1) Record any program, color bar, and monoscope when confirmation in 6-3-1 and 6-3-2 have been completed.
2) Play back the recorded tape obtained in 1) using a standard player and check that the level is higher than 300mVp-p when the RF output level is maximum.
3) Observe playbacked pictures of the standard player by a colour monitor and check that beat and picture shake are not prominent.
4) Playback the colour bar recorded tape using a conventional set which is not Beta hi-fi and check that no overmodulation is present. Check that beat is not prominent.

6-3-4. Sound Quality Confirmation

1) Supply a –10dBs signal to the audio line input when confirmation of 6-3-1, 6-3-2, and 5-3-3 has been completed. Adjust the recording level control so that –10dBs is output to the output terminal (terminated by 47kΩ).
2) Record 400Hz and 10kHz, short the audio line input keeping the recording level control in a state of (1), then record no signal.
3) Playback this recorded tape by the standard player and check that the output terminal (terminated by 47kΩ) satisfies the standard.

[Standard]

400Hz output level. . .–10 ± 2dBs (Beta hi-fi)
–10 ± 3dBs (normal)
Distortion . . . . .Less than 3.5% (normal)
10kHz output level. . .–10 ± 2dBs (Beta hi-fi)
Silent level. . . . . .Less than 70dBs (Beta hi-fi)
(Network A filter)

4) Playback a silent standard tape (KR5-10C . . . 400Hz) using SLO-1700 and check by its output terminal (terminated by 47kΩ) that the standard is satisfied.

[Standard]

–68dBs (Beta hi-fi)
(Network A filter)

Note: Use a volt meter that contains a network A filter (JIS-A) to measure silent levels in 3) and 4).

6-4. STANDARD PLAYER

Check the following items every 500 hours using an alignment tape.
Adjust in accordance with the SLO-1700 Adjust Guide if the standard is not met.

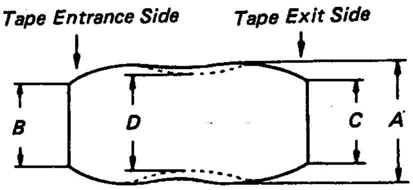
Check Item	Standard
Confirmation of Tracking	 Standard: At maximum level of tracking control knob: Contact: $\frac{B}{A} \geq 0.75$ $\frac{C}{A} \geq 0.75$ Variation: $\frac{D}{A} \geq 0.9$
CTL Position Confirmation	$\frac{\text{RF output at tracking control control knob center click}}{\text{Maximum value of RF output}} \geq 0.95$
Picture Quality Confirmation	Playback RF output level: more than 300mVp-p
Sound Quality Confirmation	Output level: –10 ± 2dBs (Beta hi-fi)
Sound Quality Confirmation	Output level: –10 ± 3dBs (NORMAL)
Sound Quality Confirmation	Silent level: –70dBs or less (Beta hi-fi) (Network A filter)

Table 6-1

6-5. PRODUCT TESTER

Check the following items once every month using an alignment tape.
Adjust in accordance with the SLO-1700 Adjust Guide if the standard is not met.

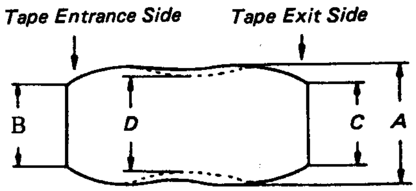
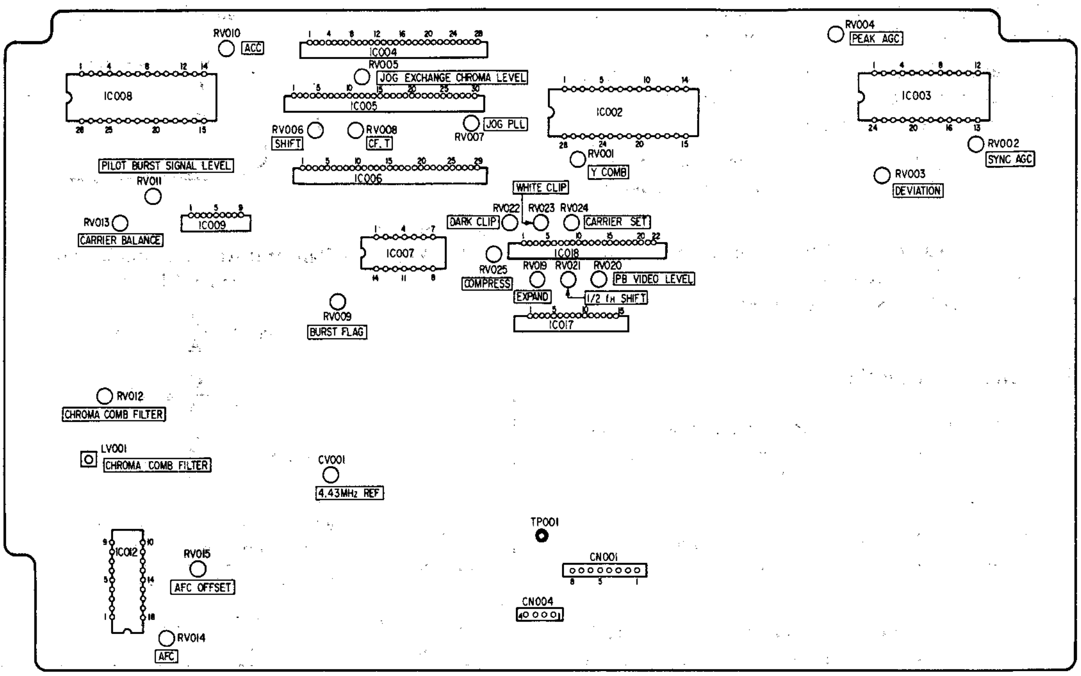
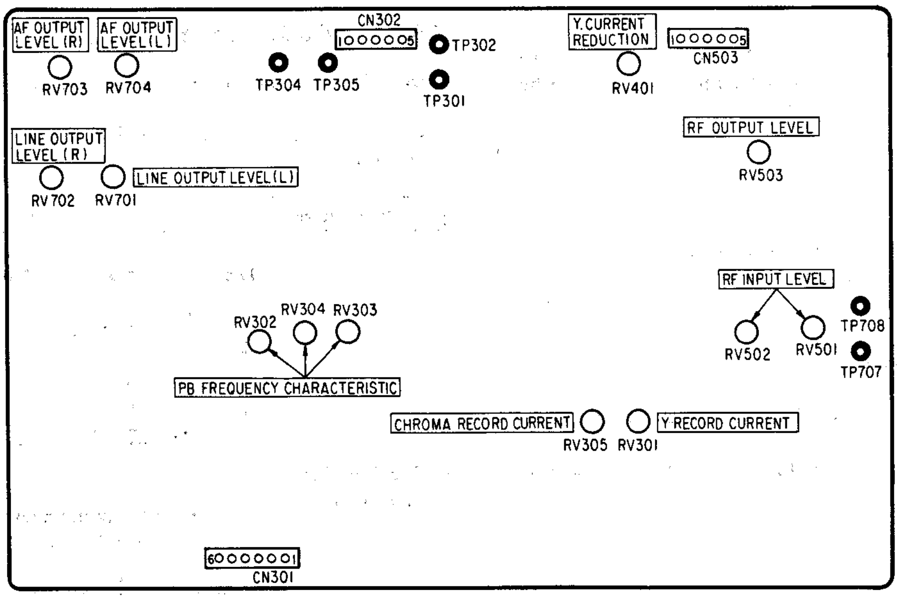
Check Item	Standard
Confirmation of Tracking	 Standard: At maximum level of tracking control knob: Contact: $\frac{B}{A} \geq 0.75$ $\frac{C}{A} \geq 0.75$ Variation: $\frac{D}{A} \geq 0.8$
CTL Position Confirmation	$\frac{\text{RF output at tracking control control knob center click}}{\text{Maximum value of RF output}} \geq 0.8$

Table 6-2

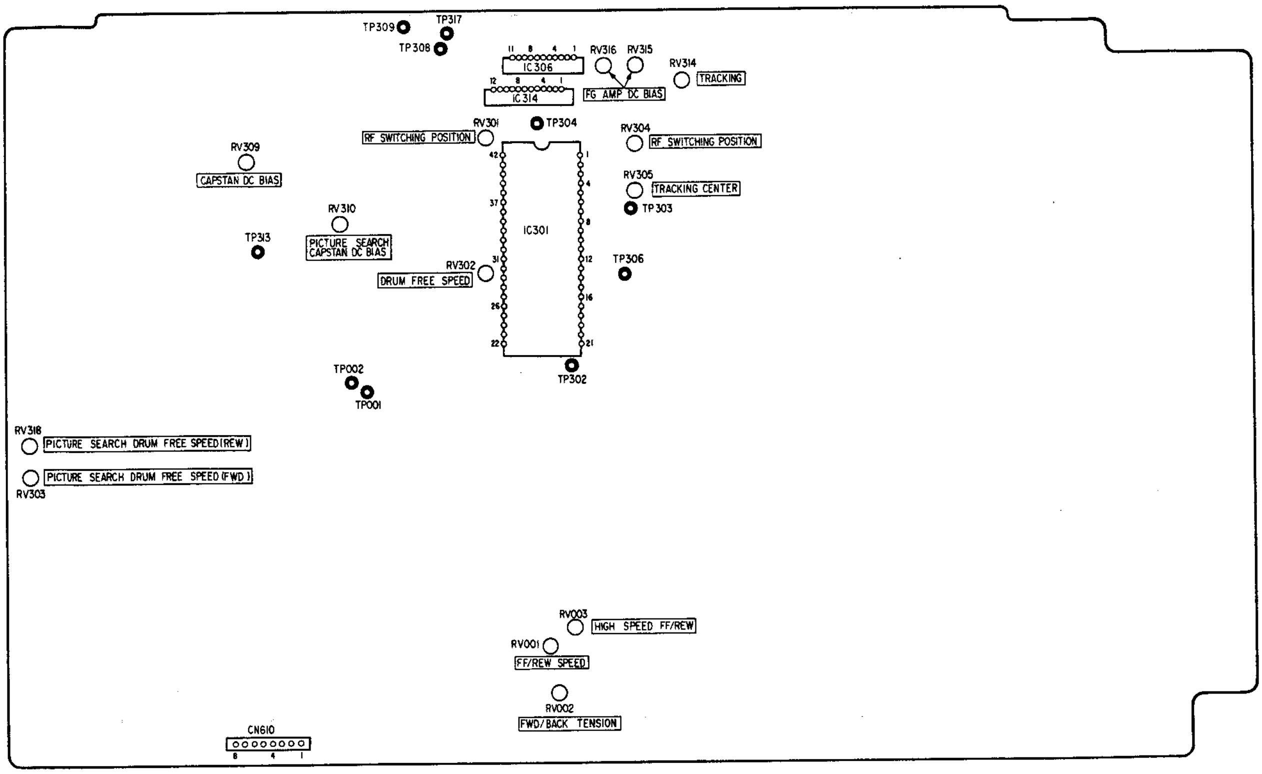
RV-7P Board (CONDUCTOR SIDE)


RV010
ACC
IC004
RV005
JOG EXCHANGE CHROMA LEVEL
IC008
IC005
RV006
SHIFT
RV008
CF. T
RV007
JOG PLL
IC002
RV001
Y COMB
RV004
PEAK AGC
IC003
RV002
SYNC AGC
RV003
DEVIATION
PILOT BURST SIGNAL LEVEL
RV011
IC006
RV013
CARRIER BALANCE
IC009
WHITE CLIP
RV022
DARK CLIP
RV023
RV024
CARRIER SET
IC007
IC018
RV025
COMPRESS
RV019
EXPAND
RV021
1/2 fH SHIFT
RV020
PB VIDEO LEVEL
IC017
RV009
BURST FLAG
RV012
CHROMA COMB FILTER
LV001
CHROMA COMB FILTER
CV001
4.43MHz REF
TP001
CN001
CN004
IC012
RV015
AFC OFFSET
RV014
AFC

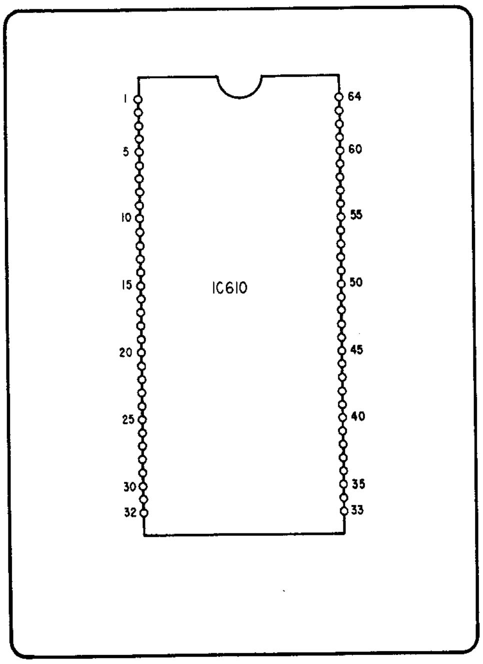
RP-18 Board (CONDUCTOR SIDE)


AF OUTPUT LEVEL (R)
AF OUTPUT LEVEL (L)
RV703
RV704
CN302
TP302
TP304
TP305
TP301
Y. CURRENT REDUCTION
RV401
CN503
LINE OUTPUT LEVEL (R)
RV702
RV701
LINE OUTPUT LEVEL (L)
RF OUTPUT LEVEL
RV503
RF INPUT LEVEL
RV502
RV501
TP708
TP707
RV302
RV304
RV303
PB FREQUENCY CHARACTERISTIC
CHROMA RECORD CURRENT
RV305
RV301
Y RECORD CURRENT
CN301

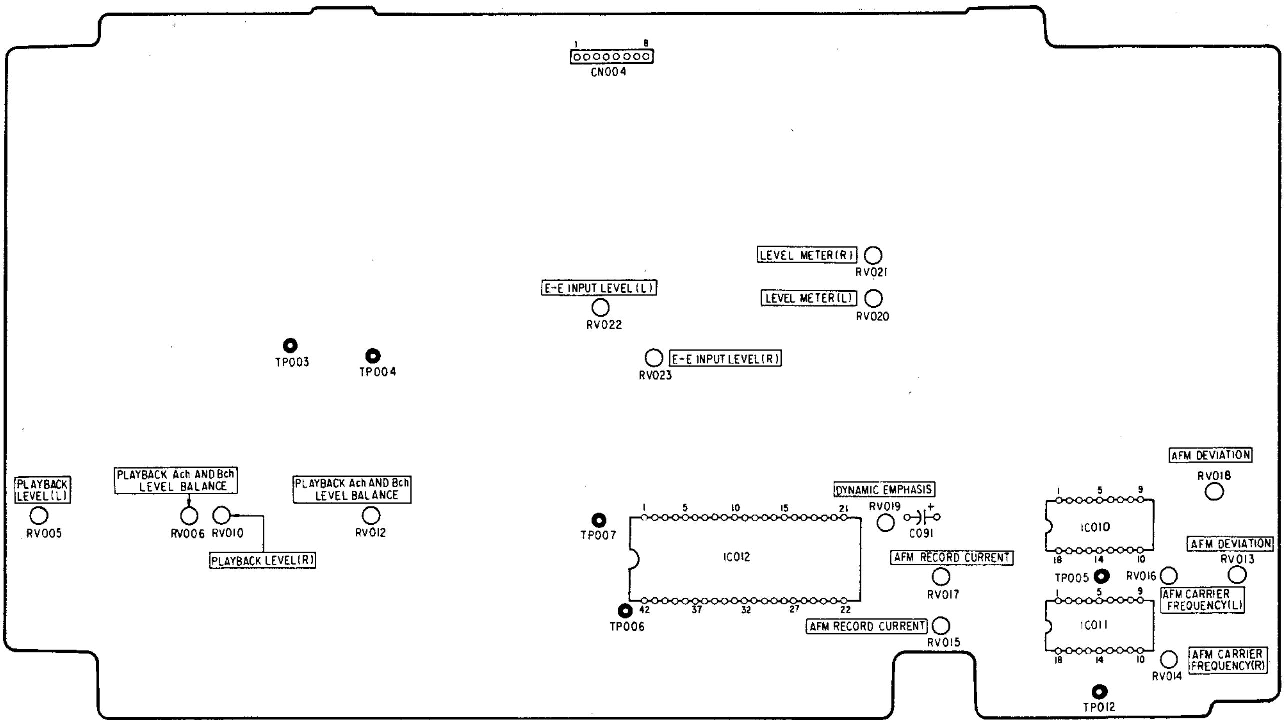
SS-29 Board (CONDUCTOR SIDE)


TP309
TP317
TP308
IC306
IC314
RV316
RV315
RV314
TRACKING
FG AMP DC BIAS
RV301
RF SWITCHING POSITION
TP304
RV304
RF SWITCHING POSITION
RV309
CAPSTAN DC BIAS
RV305
TRACKING CENTER
TP303
RV310
IC301
TP313
PICTURE SEARCH CAPSTAN DC BIAS
RV302
DRUM FREE SPEED
TP306
TP002
TP302
TP001
RV318
PICTURE SEARCH DRUM FREE SPEED(REW)
PICTURE SEARCH DRUM FREE SPEED(FWD)
RV303
RV003
HIGH SPEED FF/REW
RV001
FF/REW SPEED
RV002
FWD/BACK TENSION
CN610

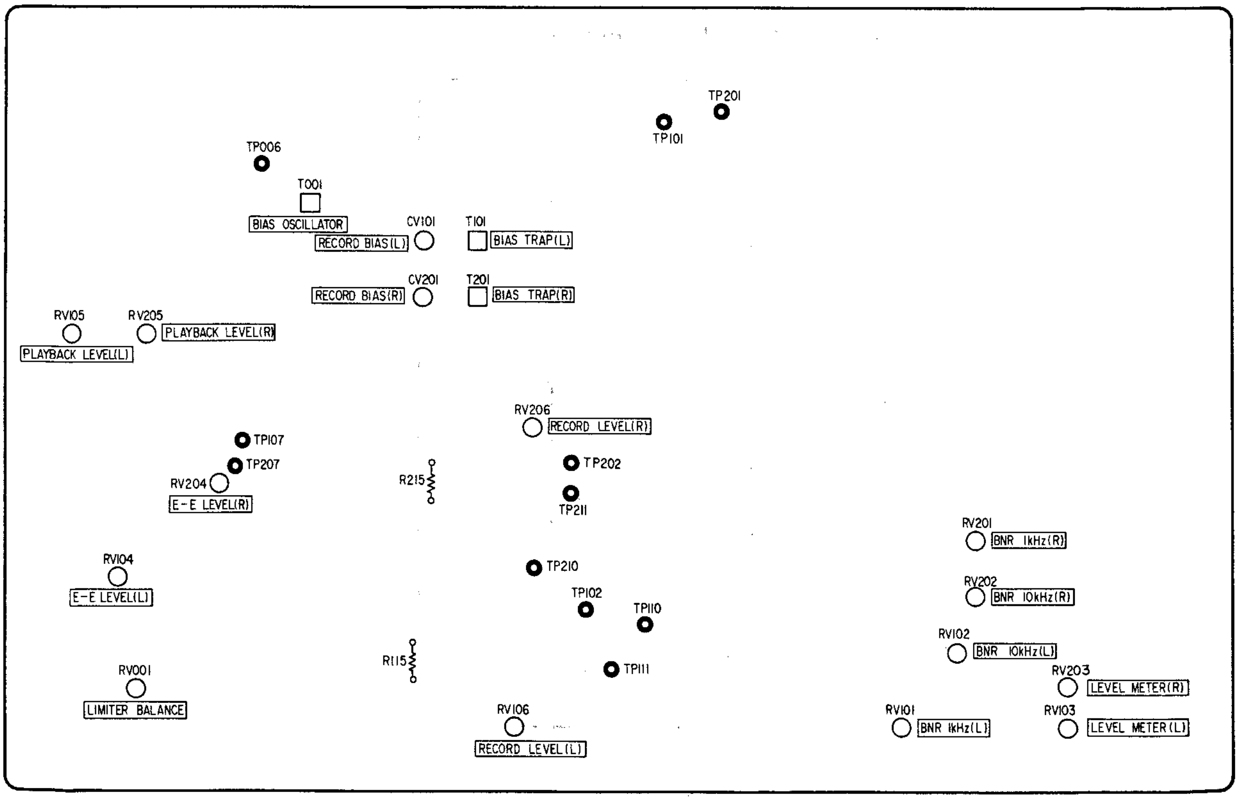
SC-2 Board (CONDUCTOR SIDE)


IC610
1
5
10
15
20
25
30
32
64
60
55
50
45
40
35
33

AF-3P Board (CONDUCTOR SIDE)


1
8
CN004
LEVEL METER(R)
RV021
E-E INPUT LEVEL(L)
RV022
LEVEL METER(L)
RV020
TP003
TP004
E-E INPUT LEVEL(R)
RV023
AFM DEVIATION
RV018
PLAYBACK LEVEL(L)
RV005
PLAYBACK Ach AND Bch LEVEL BALANCE
RV006
RV010
PLAYBACK LEVEL(R)
PLAYBACK Ach AND Bch LEVEL BALANCE
RV012
DYNAMIC EMPHASIS
RV019
C091
TP007
1
5
10
15
21
IC012
42
37
32
27
22
TP006
AFM RECORD CURRENT
RV017
AFM RECORD CURRENT
RV015
1
5
9
IC010
18
14
10
TP005
RV016
AFM DEVIATION
RV013
AFM CARRIER FREQUENCY(L)
IC011
AFM CARRIER FREQUENCY(R)
RV014
TP012

AM-6 Board (CONDUCTOR SIDE)


TP201
TP101
TP006
T001
BIAS OSCILLATOR
CV101
RECORD BIAS(L)
T101
BIAS TRAP(L)
CV201
RECORD BIAS(R)
T201
BIAS TRAP(R)
RV105
RV205
PLAYBACK LEVEL(R)
PLAYBACK LEVEL(L)
RV206
RECORD LEVEL(R)
TP107
TP207
TP202
RV204
E-E LEVEL(R)
R215
TP211
RV201
BNR 1kHz(R)
RV104
E-E LEVEL(L)
TP210
TP102
TP110
RV202
BNR 10kHz(R)
RV102
BNR 10kHz(L)
RV001
LIMITER BALANCE
R115
TP111
RV203
LEVEL METER(R)
RV106
RECORD LEVEL(L)
RV101
BNR 1kHz(L)
RV103
LEVEL METER(L)